## BUTANE-PROPANE News

A CHILTON & PUBLICATION

**JANUARY 1961** 

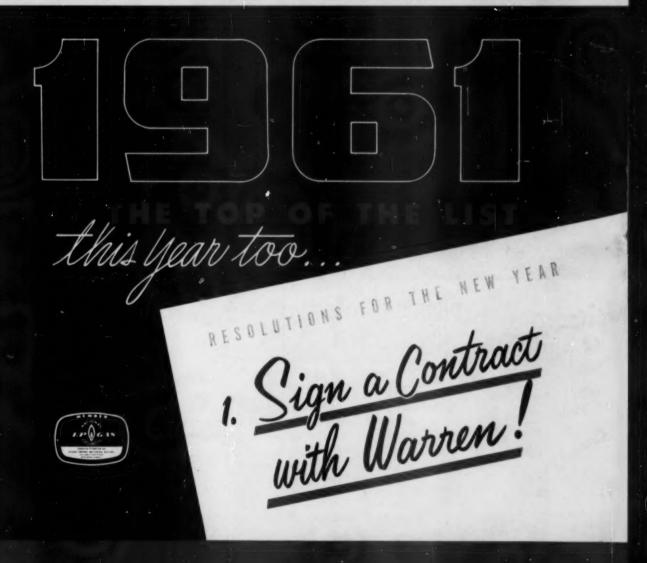
The

SHAPE

of

Tomorrow

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931



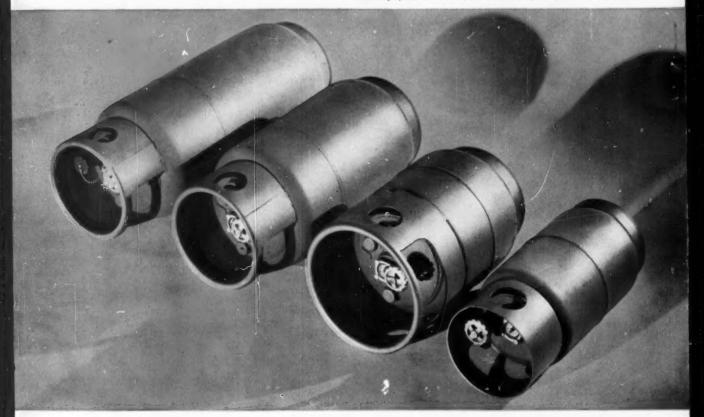
WARREN PETROLEUM CORPORATION

CONTROL SALES OFFICES

GROWTH FELT TO THE STATE OF THE ST

## HACKNEY LP-GAS CYLINDERS—your complete line of profit-winners for the fast-growing lift-truck market

Hackney cylinders shown are Models H43LFG, H33L, H20L-12 and H14LV.

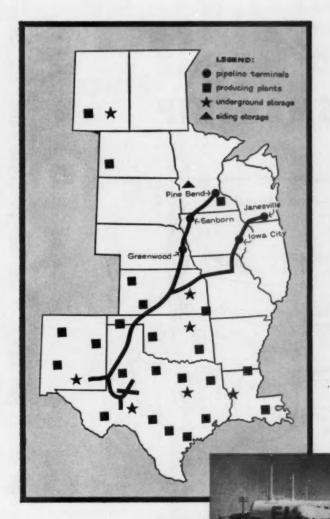


#### **DURABLE • DEPENDABLE • CONVENIENT • ECONOMICAL**



Cash in on your fastest-growing market today—LP-Gas for lift trucks. Hackney offers you profit opportunities in a complete line of lift-truck cylinders, developed in cooperation with lift-truck manufacturers. You can meet the needs of every lift-truck user in your area with 20 models in four sizes: 14-lb., 20-lb., 33½-lb. and 43½-lb. capacities. Hackney cylinders are available for vertical or horizontal installation, liquid or vapor service, replaceable or permanent mounting. Get immediate shipment of all popular sizes from our complete stocks, including "Universal" design cylinders in 20-lb., 33½-lb. and 43½-lb. capacities, suitable for either horizontal or vertical mounting. Write today for detailed specifications.





Now, from United,

#### PIPELINE PROPANE

from the Mid-America pipeline

5 new terminals in Upper Midwest . . . new, strongest-possible assurance of fuel when you need it . . . and propane from Canada too!

It simply means that depending on United for propane frees your mind of all delivery worries.

NOBODY who has a fuel contract with United should get another gray hair this winter. Nobody but NOBODY.

Because worry about fuel-supply-on-time is a thing of the past.

NOW YOU KNOW there's fuel available for you. On tap this minute, and every minute, from any of the FIVE new terminals on the Mid-America LP-Gas pipeline (see map). The pipeline is always filled. And there's THREE THOUSAND TANKCARS of propane in that full pipeline, all the time.

Then to deliver it, there's United's own huge fleet of tankcars and contract transports—ready to roll, on hand right now, able to deliver to your yard or siding ON TIME.

What are you waiting for? Get on the sure end—the receiving end—of a fuel contract with United NOW.



#### UNITED PETROLEUM GAS COMPANY

4820 Excelsior Blvd., Minneapolis 16, Minn. • WA 7-9981

## PRIDE IN CRAFTSMANSHIP



Each LPG vessel leaving our yard receives its Trinity label, whether it's a 30,000 gallon storage unit or a 110 gallon domestic system. Our men affix these trademark tags with the pride that comes from honest and skilled craftsmanship in turning out quality work. For each man knows that you, our customers, appreciate sound design, careful workmanship, and trouble free performance. It is such "pride" in serving you for over 24 years that keeps us on our toes to bring you the best fabrication methods—at competitive prices—yet at all times, top quality. Contact Trinity on your next requirement.



### TRINITY STEEL COMPANY, INC.

4901 IRVING BLVD. - DALLAS 7, TEX. - FL 7-3961 INDIANA PLANT: FRANCESVILLE, INDIANA When in Mexico City Visit: Tanques de Acero Trinity DOMESTIC SYSTEMS . TRANSPORTS . DELIVERY UNITS . STORAGE TANKS .

FARM

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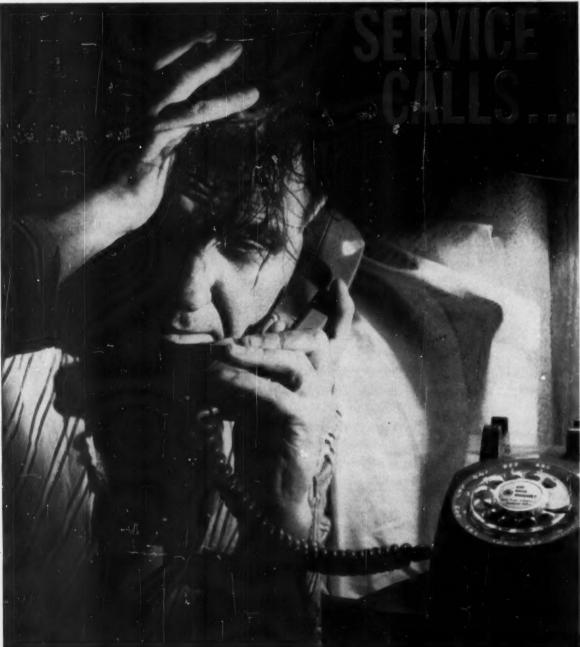
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JANUARY, 1961

### YOU DON'T HAVE RUINOUS



You don't have to put up with midnight service calls, loss of goodwill, and the added expense of profit-robbing service calls . . . unless you insist upon installing the cheapest outfit you can find that *might* handle the job.

Smart operators have learned that a profitable gas installation is made when it's done right the first time. This involves proper pipe and regulator sizing considering the most extreme load and weather conditions and insistence upon two-stage regulation where wide variations are involved.

## WITH REGO Two-Stage Regulation

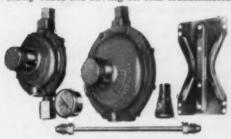
RegO Two-Stage Regulation Has These Advantages:

Provides More Accurate Pressure Regulation. Constant gas delivery pressure for proper appliance operation is provided by ironing out variations in inlet pressure created by high temperature, high tank pressures and light loads in summer, and low temperatures, low tank pressures and peak loads in winter.

Minimizes Freeze-Ups. Sudden expansion of the gas in a single stage regulator can cause moisture in the gas to freeze at the regulator nozzle. Two-stage regulation divides the cooling effect into two phases virtually eliminating freeze-ups.

Reduces Possibility of Flame-Outs. Since the inlet pressure to the second stage regulator is relatively constant, delivery pressure to the appliance can also be held steady, reducing the problem of variable flame heights and pilot outage.

More Economical Installation. Smaller tubing can be used to transmit the first stage delivery pressure from the container to the second stage regulator at the building. In many cases the saving on this transmission line will pay for the first stage regulator.



BEST FOR BULK SYSTEMS RegO Two-Stage ASME Outfits

HI-LO outfits in a single package offer the finest regulation obtainable.

For loads up to 625,000 BTU 250 CFH For loads up to 1,250,000 BTU

Use RegO Red Giant with RegO 2403B4

Use RegO Red Giant with RegO 2503B4

order now from your RegO distributor or write:



BEST FOR BOTTLE SYSTEMS

RegO Two-Stage Bottle-Gas Outfits

The popular RegO Certimatic\* outfit handles loads up to 568,000 BTU/hr (225CFH) and provides both two stage regulation as well as being an automatic throwover manifold.



DO YOU KNOW it will pay you dividends to lotal



#### The BASTIAN - BLESSING Company

4201 West Peterson Avenue, Dept. 31-A Chicago 46, Illinois

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#### "Economy Run" deluge

IN RECENT WEEKS, this office has been deluged with requests for reprints of what is easily the most popular article we ran last year: "How LPG Engines Win the Economy Run Against Diesels and Gasoline" (September).

Anticipating additional requests, we've overrun our reprint order by several hundred. So, if you'd like one or a dozen, or even a hundred, get your orders in early (the charge will be nominal) and we'll dole them out as long as they last.

Reprint requests are always a good editorial weathervane. By indicating reader interest, they help us in selecting articles for future publication.

But some take on special significance, and such is the case with the "Economy Run" story. It shows, for one thing, the tremendous interest in the battle of the fuels for the internal combustion loads. Despite the emphasis currently being placed on diesels for the big jobs, it shows that this industry is not prepared to concede a thing.

We have learned to expect high interest from articles on fork lift conversions. This particular fuel application is one in which LPG completely overshadows all its competition. It's so obviously superior that dealers by the thousands have crowded onto the bandwagon.

But the "Economy Run" story concerned heavy-duty truck engines. It's heartening to see such widespread interest in a field beset by such intense competitive pressures.

#### BACK TALK

#### Request from writer

Fort Wayne, Ind.

I noticed that you published in the September issue of BPN "How LPG Engines Win the Economy Run..." referring to a paper I presented to SAE in Cleveland.

I have left the Hercules Motors Corp. and joined the faculty of Indiana Technical College and also serve as consultant to International Harvester Motortruck Engineering Department in Fort Wayne.

I would appreciate it if you could send me two copies of the September issue.

DR. ERWIN A. V. HORIAK

#### More of the same . .

Tampa, Fla.

I would appreciate it very much if you would send me 10 reprints of the article "Fiberboard Producer Switches to LPG For Health Reasons" from your November 1960 issue. I would also like 10 reprints of the article "How LPG Engines Win the Economy Run Against Gasoline and Diesels" from your September 1960 issue.

JOHN S. SCHNEDL JR. Suburban Florida Bottled Gas Co

#### We have a friend . . .

St. Louis, Mo.

I feel sure your harping on political action helped start the boys thinking more about it, and the future will demand more people in business to become knowledgeable on the subject. Not too much can be done to keep our members alerted to the subject and especially now, with a new regime coming in.

We have a good friend of the L. P. gas business from Missouri, Congressman Thomas Curtis. He'll be heard by both sides. He jumped from a 6000 vote majority to about a 35,000 one—when all around him was going the other way.

E. K. LOVE, JR. PRESIDENT Red-E-Gas Co.

To show the stature of Rep. Curtis, Bud Love enclosed a reprint of

a Newsweek column by Raymond Moley, titled "Curtis Fights for Sanity." If he's the man Moley says he is, it's good to know he's a friend of the L. P. gas business.

Maybe we can help elect a few more friends in 1962. It's not too early to start working for them.— Ed.

#### "Well-heeled" REAs

Warren, Minn.

In your November issue, Mr. Regeimbal states that the "well-heeled REA's" have snapped up \$5 billion of a special two per cent government bond issue. He concludes that this will give the country some idea of the tremendous size of cash reserves that these organizations have been able to build up as a result of subsidy government loans.

I realize that it would be an exercise in futility to try to change your traditionally hostile attitude toward REA co-ops. Yet, as editor of a national trade magazine I feel you are motivated by the sound principle that editorial conclusions ought to be based on true facts.

According to the annual statistical report published by the Rural Electrification Administration which covers the operations of all of its borrowers for the year 1959, their total balance sheet footings for that year were \$3.3 billion.

This being the case, it would obviously have been impossible for these organizations to have purchased \$5 billion in bonds as stated by Mr. Regeimbal.

ROBERT A. GRAHAM MANAGER

P. K. M. Electric Cooperative Inc.

Unfortunately, I'm afraid with federal government the size it is, we get too used to talking in terms of billions of dollars. In this case, obviously, the figure is \$5.1 million, not billion.

However, as you know the last figure from REA (Jan. 1, 1960) shows REA cooperatives with loans outstanding to have "excess funds" of \$632 million, which I'm sure you'll agree does make the industry pretty "well heeled" even if the third of that which is committed to member refunds is excluded.

NEIL REGEIMBAL WASHINGTON EDITOR NEW
AUTOMATIC
VENTER
lets you install
Reznor unit heaters
almost anywhere!

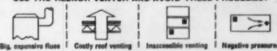
Now, with the Reznor Venter, you can install direct-fired Reznor heaters where you couldn't before—in multi-story buildings or structures with hard-to-get-at chimneys! You'll save money for your "tough buyers," and sell more unit heaters, too.

The Venter, available exclusively with Reznor Heaters, is a motorized automatic vent exhauster that mounts directly on the heater. You simply install a 4-inch diameter vent pipe to carry burned gases to a sidewall—or down through the floor and out, if you choose. No more costly roof venting or big, expensive flues. Heaters operate more efficiently, too, especially if the room has an exhaust fan which creates a negative pressure.

There's a Venter for all Reznor Heaters up to 300,000 Btuh capacity. Ask your distributor for Catalog SA-5900, with data on all Reznor Heaters and the new Venter. Or write Dept. 4-G, Reznor Manufacturing Co., Mercer, Pa.



USE THE REZNOR VENTER AND AVOID THESE PROBLEMS:



#### REZNOR HEATERS

"WORLD'S LARGEST SELLING DIRECT-FIRED HEATERS"

Bridge production gap for oil field manufacturer

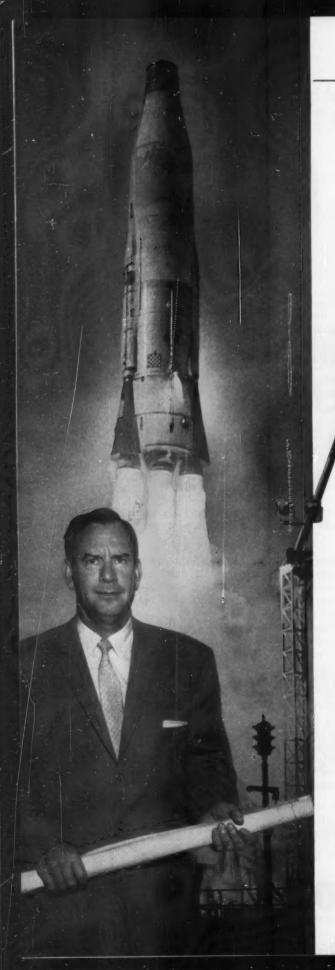
## Beaird-AMF A companyon the go!

NEW PRODUCTS, SKILLS, IDEAS SPARK DRIVE

Under the guidance of a tall (6'3") soft-spoken Texan, President John L. Tullis, Beaird is on the rebound from a low caused when the oil industry skidded into its own personal recession in 1958.

Long a major supplier of equipment (skid-mounted packaged compressors, pressure storage vessels, rail tank car tanks, steel piling, LP-Gas transports and home LP-Gas systems), Beaird has repeatedly demonstrated its ability to move swiftly in a competitive situation. Pioneering with the first packaged compressor plant in 1946, they established and dominated the market for this product despite intensive competition. Equally in the LP-Gas industry, Beaird moved, in five years, from its first LP-Gas system in 1946 to the industry leadership, with a host of products serving every phase of the market from dealer to home.

Now entering new markets with new creatively engineered products ("Belex," a self-operated condensate recovery unit for installation at wellheads and a skidmounted complete gasoline plant composed of eight separate processing units), Beaird has received an additional boost from acquisitions and defense contracts. Maxim, the oldest name in silencers (gross sales \$3,000,000 in 1959) has been acquired by AMF and assigned to Beaird to manufacture and market. The bustling shop program is also producing an \$8,500,000 order for giant Atlas Missile launching components and a large order for stainless steel Titan missile fuel tanks. Beaird has targeted a stepped-up sales goal in '60 and is headed upward with a rush that may well take it far beyond its most optimistic predictions. From its people in the shops to its wide-flung dealer and sales organization, there is a firm belief that Beaird-AMF is a company on the go . . . and getting there in a hurry!



#### BEAIRD-AMF

World's Largest Fabricator of LP-Gas Systems



Long lasting enamel finish is just one of many basic improvements Beaird has brought to LP-Gas industry. To make new finish possible Beaird installed giant "assembly line" plate shot blast equipment at both Shreveport and Clinton plants. Beaird has continued to strengthen its LP-Gas market position with a vigorous dealer program that includes area stocking and long term financing.



CO<sub>2</sub> Transport, has welded aluminum shell over four inches of insulation that surrounds the T-1 steel...325 psi tank. Other specialized Beaird units are formed of stainless steel for chemical hauling. T-1 Steel Transports for LP-Gas Market lead Beaird transport sales.



World's largest LP-Gas storage vessels—capacity 5,000 bbls. each were built by Beaird for Creole Petroleum, Venezuela. One of firm's oldest and best known products, Beaird storage vessels are manufactured in a size range from 6,000 wg. to 105,000 wg. capacity for the oil, gas and petrochemical industries.

Belex Condensate Recovery unit, mounts at wellhead to extract hydrocarbons (gasoline, propanes, methanes, etc.). Fully packaged and automatic in operation, the Belex unit offers high product recovery with low installation cost.



10,000,000 Cubic Feet of Gas per Day can be handled by this Beaird Skid Mounted Gasoline Plant. Expensive field labor and installation hook-up is reduced to minimum and the plant is almost wholly salvable when moved to a new location. It was process engineered and installed by O. L. Olson Engineering, Houston, Texas.



Twenty-five ton silencer, one of the many Maxim silencers now produced by Beaird. Others include little two-pound units for home lawn mowers, sizes for heavy duty engines and special types for ships and industrial plants.



THE J. B. BEAIRD COMPANY, INC.

A subsidiary of American Machine & Foundry Company SHREVEPORT, LOUISIANA CLINTON, IOWA



Navy Submarine has an AMF-Maxim monel and stainless steel sea water plant which demonstrates Beaird's new metal handling skills. Fabrication including welding of aluminum and magnesium for rail tank cars as well as work in other exotic metals has become a routine assignment at Beaird.

#### THE TRUCK PUMP DESIGNED FOR USE ON TRUCKS ...

#### CORKEN CORO-VANE

THESE FEATURES MAKE THE CORO-VANE EASY TO INSTALLL AND OPERATE-EFFICIENT, DEPENDABLE, ECONOMICAL AND LONG, LONG LASTING





All parts, including the long wearing hydraulically actuated blades, easily accessible without disturbing piping.



Internal relief valve set for 125 PSI, easily adjustable while operating.



Double extended shaft permits either direction PTO drive.



Universal mounting bracket (ductile iron) permits mounting pump at any angle.



Reversible side plates for double life.



Ductile iron flanges eliminate unions, make installation easy.



Rigid pressed-fit steel shaft and ductile iron rotor assembly combine to form solid unit. No holes, no pins to wear out.

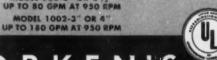


Precision ground cam. Extra large inlet and outlet ports for maximum capacity. Easily replaceable.



New improved unitized mechnext improved unitized mechanical seal and bearing car-tridge assembly. Gives years of trouble - free service. Can be replaced in a jiffy — by anybody.

MODEL 502-2" OR 21/3" UP TO 80 GPM AT 950 RPM



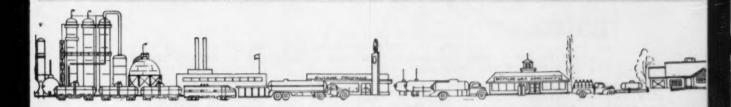
THE BEST DISTRIBUTORS IN THE WORLD SELL AND SERVICE CORKEN PUMPS

CORPORA

P. O. BOX 1062 . PH. CE 5-5517 OKLAHOMA CITY, OKLA. U.S.A.

#### HIGHLIGHTS





Almost all gas appliances will enjoy sales gains in '61, despite current recession talk. That's the conclusion of a telegraphic survey of the 576 GAMA members who make 95 per cent of all gas-burning equipment. Range sales should rise 14.8 per cent to 2,116,300 units--via increases of 13.2 per cent in free-standing models and 21.3 per cent in built-ins. Gas central heating should improve 12.2 per cent to 1,318,000 units--via increases of 14.6 per cent in furnaces, 7.5 per cent in boilers, and 0.9 per cent in conversion burners. Other heating equipment increases are: vented recessed wall heaters, 4.4 per cent; direct (room) heating equipment, 3.6 per cent; unit heaters, 2.1 per cent; and duct furnaces, 10.3 per cent. The only drop is expected to be in floor furnaces, 1.3 per cent. The overall volume leader will continue to be water heaters, a 6 per cent increase raising the total to 2,822,000. Lowest predicted sales total--but still a 9.2 per cent increase--was for incinerators, 46,400 units. "Substantial, though unpredictable, increases" are expected in air conditioning units, refrigerators, and lights.

To complete the '61 appliance prediction picture, AHLMA says that gas dryer sales should jump 9 per cent to 472,000 units, more than double the percentage increase for the entire home laundry appliance market.

On another prediction front, the Institute of Appliance Manufacturers says that 22 major leaders in the industry agree that the selling emphasis in '61 must be on convenience and serviceability, not price. Rising costs, they said, make early price increases "almost a certainty."

But there will be price cutting, if not in January, then by early spring. That was the consensus of a December white goods dealer poll made by Electrical Merchandising Week. The publication also noted that manufacturers "disagreed sharply" with dealers on this point.

One last prediction for the new year--Paul H. Rutherford, general manager, Delco Appliance Div., General Motors Corp., says 18 per cent of the homes built in '61 will have combined central heating and cooling systems.

The end of the year is report time and just before this issue went to press, two important reports crossed our desks into the January feature section. The annual Phillips Report (page 36) noted that 1960 LPG sales increased over 10 per cent to a total of nearly 10 million gallons. A report to the Chicago Transit Authority (page 64) climaxed a five-month, \$50,000 study by recommending the city "continue to emphasize" propane buses.

A third report of interest to the industry crossed another desk, that of President-Elect Kennedy. A confidential report by James M. Landis (former Civil Aeronautics Board head and Harvard Law School dean), it called for a "ministry of fuels" to set up fuel policies in certain areas.

Big LPG pipelines continue to be big news. In early December, the recently announced Trans-Southern line said it would offer Houston-to-the-Southeast rates at no more than half of rail tariffs; and added that one small piece of construction on the line had been completed. Almost simultaneously, a group headed by four large LPG producers (who might be customers for the Trans-Southern line) announced it was considering building an almost identical line. Under study by Warren Petroleum Corp., Phillips Petroleum Co., Union Texas Natural Gas Corp., Tuloma Gas Products Co., and others,

#### HIGHLIGHTS

the line would run about 1100 miles, but would cost only \$35 million. An 8-in. and 10-in. line, it would carry only 25,000 bbl per day, as opposed to the 12-in. Trans-Southern line's 60,000 bbl. Market surveys are said to justify only one line.

Butane made the headlines in the nation's newspapers with an early December wire services' story on producing fresh water from sea water. A Blaw-Knox Co. engineer told the American Institute of Chemical Engineers that butane "appears very attractive for economically converting" sea water--and that his firm is building a pilot plant. Butane would act as both a refrigerant and a melting agent. Sea water would be frozen to slush, the remaining salt sluiced away, and the slush melted in a continuous stream of fresh water.

The world's largest propane storage tank, a 120,000-bbl whopper, will be the heart of a giant refrigerated storage facility that will nearly double the peak-shaving capacity of Minneapolis Gas Co. Scheduled to be operating this June, the facility is expected to cut storage costs 75 per cent. Chicago Bridge & Iron Co. will design and build the 100-ft diameter, 106-ft-high tank.

Stronger steel will be cheaper, meaning significant savings on lightweight steel transportation equipment. Such equipment, which has used T-1 steel, can now use T-1 Type A, a less expensive alloy announced in December by U.S. Steel Corp.

News about manufacturers—Dixie Products Inc., Cleveland, Tenn., maker of ranges, freezers, and vending machines, in early December consolidated all its divisions under the corporate name of Magic Chef, Inc. Dixie Products bought Magic Chef in 1958, has since marketed under both names, but will now use only the Magic Chef name. . . . Pressed Steel Tank Co., Milwaukee maker of Hackney cylinders, tanks, and transports, has divided its sales force into eastern and western divisions, respectively headquartered in Downingtown, Pa., and Milwaukee. James A. Varnado will head the eastern half; Robert A. Hirst, the western half. . . . Temco Inc., Nashville, Tenn., gas heating equipment maker, was purchased in late November by the Ryder System Inc., according to the Associated Press. One of the world's largest leasers of trucks and cars, Ryder said it paid "more than \$2 million." A Ryder vice president, Ralph B. Ryder, will become chairman of Temco.



#### CURRENT L. P. GAS & L. R. GAS PRODUCTION & INVENTORIES (A. P. I. figures - in thousands of gallons)

THE PROPERTY OF THE PROPERTY O	Propane	Butane	Bu-Pro Mix	Iso- Butane	Other Mixes	Total LPG	Total LRG
Production (U. S.)	And States						
Nov. '60	365,750	159,011	52,240	59,616	77,893	714,510	273,260
Nov. '59	332,889		48,253	56,832	72,830		
		1,889,093	592,720	623,540		7,684,049	
'59 same period	3,344,287	1,826,633	634,100	579,494	698,780	7,083,204	2,535,652
Inventories (11-30	-60)						
Zone A	20,396	2,050	19	_	10	22,475	22,328
Zone B	59,716	4,831	344	1,197	963	67,051	21,826
Zone C	98,007	31,254	1,062	3,106		133,429	
. Zone D	129,223	13,004	22,953	1,293	205	166,678	
Zone E	168,964	148,470	1,490	14,456	13,014	346,394	
Zone F	300,414	66,769	1,450	7,439	42	376,114	4,549
Zone G	4,116	1,016	8,994		61	14,187	720
Zone H	837	289	153	163	156		
U. S	781,673	267,683	36,465	27,654	14,451	1,127,926	148,964
U. S. (11-30-59)	651.694	181.511	32.763	48.166	20.478	934.612	110.874

## profit-ability from Robertshaw

#### Robertshaw controls up-grade gas range sales!

It's no secret . . . the quickest way to higher profits is to up-grade the sale. And the place to begin . . . sell Robertshaw control features that let ranges do more than cook!

Robertshaw FLAME SET, the newest "burner-with-a-brain" means:

- no more burned pans
- · no more scorched food
- small flame for small pans
- · BIG flame for BIG pans
- · simplest to operate
- · no instructions needed

Robertshaw FLAME MASTER® means full oven control for cooking and baking, plus these low temperature features:

- \* roasts can be kept for hours . . . just right
- · plates can be heated at low, low temperatures that "pamper"
- · food can be kept serving-warm without over-cooking
- \* complete meals can be kept hot for late-comers
- · frozen food can be thawed in a jiffy

Sell these plus features on your deluxe-line Robertshaw-equipped gas ranges. Up-grade the sale and up your profits. Enjoy more profit-ability . . . from Robertshaw . . , the name that MEANS temperature control.

Robertshaw \*.



### WORES "SAFETY LINERS"

Built to the Greater Safety Demands of this Growing Industry

You can now haul MORE GAS and LESS STEEL than ever before with skillfully engineered, smart looking, streamlined Nor-Tex transports of T-1 and A-202B steel. These road-tested units are hauling more gas and substantially boosting profits for users everywhere ... meet latest code ICC-MC-330 requirements. Fittings are recessed for safety. Exclusive Nor-Tex

swirlproof SUMP permits easy unloading of EVERY DROP OF GAS. Nor-Tex transports are safe and dependable in every way . . . built by men with years of bulk plant experience. Interested attention, experienced assistance and helpful suggestions are yours for the asking. Write, wire or phone collect today.



A PLAN TO MEET EVERY NEED



#### HAUL MORE GAS...

#### **BONUS SAVING**

As authorized new truck distributors Nor-Tex can save you hundreds of dollars on Internationals ... Chevrolets ... Fords ... Diamond T and GMC's. Order any unit you need. You can't beat a Nor-Tex deal for all-around value.

BALANCE YOUR LOAD THE NOR-TEX WAY



Complete with Aluminum Skirting and Cabinets



Write, Wire or Phone Collect Today



National Sales Agents for

IMPORTANT

2500 WG Nor-Tex Units Weigh Under 23,000 Pounds LOADED... Under 13,000 pounds empty, eliminaling extra federal highway use tax. Ideal in states imposing ton mile tax.

NORTH TEX



#### LESS STEEL...Than Ever Before!

#### More Bigger Payload Delivery Units

Bulk plant operators everywhere praise the sleek, LIGHT-WEIGHT, streamlined twin or single barrel Nor-Tex LPG Delivery Units. Nor-Tex pioneered ALUMINUM SKIRTING and CABINETS, and practical engineering designs have reduced overall weight. 3000 WG units and over, on cab-over or cab-forward trucks, are still within the 18,000-lb. axle limit Custom designed Nor-Tex high-flow plumbing delivers "extra" gallons faster. For day in, day out efficiency, durability, payload, fast loading, high rated delivery, perfect balance and appearance, Nor-Tex delivery equipment just can't be beat!

4 Models · 8 Styles
STANDARD
PAYLOAD
CUSTOM
DE LUXE

## ROUTE-RATED To Meet YOUR Need

"Guess-calculation of delivery unit size becomes more and more hazardous as costs increase and profit declines," an LPG Industry report states. It's no wonder our Route-Rating service has grown so popular. Nor-Tex "ROUTE-RATED" units are built to fit your route's need, based on the length of route, the terrain covered convenience of cabinet location, and number of trips required on peak loads. Follow these simple RULES for PROFIT today: (1) Deliver EXTRA Gallons Each Trip, (2) Work FEWER Hours, (3) Drive LESS Miles and (4) Eliminate COSTLY Overtime Expense. You can do it with Nor-Tex units.

"Right Sized Units on Right Sized Chassis Pay On The Job"

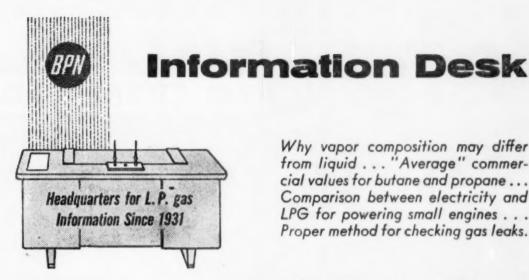
ASTANK CO. P.O. Box 1219
Denton, Texas

## PHILGAS [[[8] [[]] [] [8] [[8] [8]

More than 5 million farm people will see Philgas ads in farm magazines in 1961. Consistent advertising of Philgas helps you reach and influence the biggest potential market for LP-Gas. When you display Philgas . . . the largest selling national brand of LP-Gas . . . on your equipment, it means business for you. Get the unique combination of benefits no other brand offers-switch to Philgas. Write, wire or phone:

PHILLIPS PETROLEUM COMPANY, PHILGAS SALES, Bartlesville, Okla.





Why vapor composition may differ from liquid . . . "Average" commercial values for butane and propane ... Comparison between electricity and LPG for powering small engines . . . Proper method for checking gas leaks.

#### How to figure losses in transferring fuel

Colombia

We are wondering if you can help us with a formula for converting vapor to liquid. We are receiving delivery of our LPG from the refinery in a 2200-wg tank truck, with return vapor line.

We are being charged for the total amount of the liquid delivered adjusted only for temperature. However, we feel that we are entitled to an adjustment for the vapor returning to the refinery's delivery tank, and we need the necessary formula for calculating the liquid equivalent of such vapor return.

The LPG is made up of a mixture of 80 per cent butane, 18 per cent propane, and 2 per cent ethane with 0.560 specific gravity.

C. L. C.

An accurate estimate of the fuel returned to the refinery from your truck is difficult to calculate because of the high ethane content. Two per cent ethane is unusually high for L. P. gases. In an L. P. gas mixture the components which have the lower boiling points will exert the greater partial pressures.

This means that the saturated vapor from a mixture of components will have a different analysis than the liquid. The components with the lower boiling points will constitute a greater portion of the vapor than they do in the liquid. Adding to the confusion is the variation in percentage of each constituent as the temperature changes.

The composition of the vapor produced from the liquid can be calculated for any mixture by the method

Table for calculating composition of vapors in LPG mixture

	Percent	Percent of each component in vapor at			measured at 60°F, and atmospheric pressure		
Component	in liquid	40°F.	60°F.	80°F.	40°F.	60°F.	80°F.
Ethane Propane	2.0	23.7 40.6	22.3 39.8	20.7 39.3	3.00 3.50	2.82 3.43	2.62 3.38
Butane	80.0	35.7	37.9	40.0	2.37	2.48	2.62
Total	0.001	100.0	100.0	0.001	8.87	8.73	8.62

illustrated at the top of page 41 in the Handbook BUTANE-PROPANE Gases. Vapor pressures for propane and butane at various temperatures are given in the tables on pages 26 and 27 or in the graph, Fig. 4, page 45, where the vapor pressures of ethane are also shown.

Based on the method of calculating the vapor analysis on page 41, the composition of the vapors and the number of cubic feet in a pound of the mixture is given in the accompanying table.

Your 2200-wg tank truck has a volume of 2200 + 7.48 (gal. per cu ft) or 294 cu ft. Only that portion of gas replaced by liquid is transferred back to your supplier's tank, plus or minus a quantity to equalize the pressure, in the two tanks. The amount, plus or minus, to compensate for pressure difference between the two containers at the start of the transfer operation is based on the total water capacity of the truck container.

The table of percentage and cubic feet of gas per pound is based on a certain set of conditions. There are many variables which will affect the actual composition of the vapors. Therefore, it seems best for you and your supplier to agree upon a reasonable average figure for the standard cubic foot of vapor to equal a pound. This will depend on temperature. analysis of the fuel pressure and other variable conditions.

The correction for vapor transfer can be calculated as follows:

$$\frac{(P_1 - IP_4)}{P_2} \times \frac{V}{W} = \text{pounds} \quad \text{of} \quad \text{vapor}$$
transferred to equalise pressure}

- P<sub>1</sub> = Absolute pressure in your truck before equalizing pressure
- P1 Absolute pressure in your truck after equalizing pressure
- Pa = Base atmospheric pressure and is usually taken as 14.7 pei
- V Volume of your tank truck 294
- W = Cubic feet of vapor per pound of mixture at the temperature in-

As an example assume the pressure in your truck is 40 psig which is about what it should be at 60 deg. F. for a fuel of the analysis under consideration. Suppose the supplier's tank is at a lower temperature and after the pressures are equalized your tank truck is at 35 psig. I do not know where your supplier is located or the elevation above sea level of his plant, so I do not know the barometric pres-

Assume the location is 3300 ft above sea level where the barometric This you'd expect... only from Fisher!

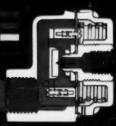
A COMPACT

"MITEY JOE" R300

#### SIMPLICITY OF DESIGN AND OPERATION

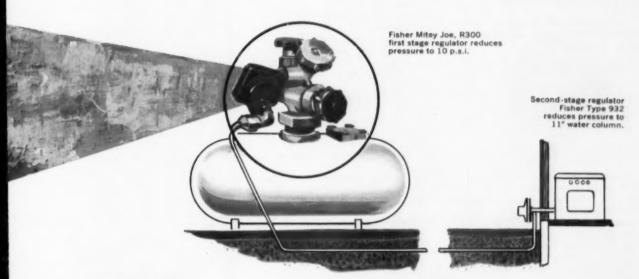
Inlet pressure (red) enters through orifice to downstream system. The outlet pressure (blue) acts against the diaphragm, opposing the spring, and causing the seat assembly to move toward orifice. Thus rate of flow is varied to control downstream pressure.

Inlet Pressure **Outlet Pressure** Atmosphere



#### HANDFUL OF REGULATOR

#### that <u>obsoletes</u> once and for all... all other first stage regulators



#### LOW COST

Your unit cost for the Fisher R300, Mitey Joe, is approximately 25% less than that of conventional type first stage regulators. This is made possible by the internal simplicity of the regulator (only two moving parts).

#### ECONOMICAL INSTALLATION

This compact regulator can be mounted on its own piping connections, with absolutely no need for a mounting bracket. It is constructed entirely of corrosion-resistant materials, and its small size (only  $2\frac{1}{2}$  square and  $2^{m}$  long) makes it possible to use a smaller size hood.

#### FREEZE PROOF

The freezing problem is brought to an absolute minimum because of the streamlined design of the regulator and the large orifice used in the construction.

#### ACCURATE

The combination of the R300 and a good quality second-stage regulator, such as the Fisher Type 922 or 932, is your assurance of a system that provides the high accuracy required for proper appliance operation.

#### NEVER NEEDS ADJUSTMENT

The R300 first stage regulator is preset at the factory to deliver 10 pounds outlet pressure. It never requires field adjustment and can't be "monkeyed with".

#### HIGH VOLUME CAPACITY

The Fisher R300 is designed to operate with any second-stage regulator having capacities up to 1,250,000 btu/hr (500 cfh propane). It has ¼" NPT inlet by ½" outlet connections.

IF IT FLOWS THROUGH PIPE ANYWHERE IN THE WORLD ... CHANCES ARE IT'S CONTROLLED BY ...

#### FISHER GOVERNOR COMPANY

Marshalltown, lowa / Woodstock, Ontario / London, England
BUTTERFLY VALVE DIVISION: CONTINENTAL EQUIP. CO., CORAOPOLIS, PA.



SINCE 1880

or absolute pressure is about 13.0 psi. P<sub>1</sub> and P<sub>2</sub> are absolute pressures and are obtained by adding the barometric pressure to the gauge pressure. Then P<sub>1</sub> equals 40 plus 13 or 53 psia and P<sub>2</sub> equals 35 plus 13 or 48 psia. Use 8.73 for W, the cubic foot of vapor per pound at 60 deg. F.

$$\frac{(P_1 + P_2)}{Pa} \times \frac{V}{W} = \frac{(53 + 48)}{14.7} \times \frac{294}{8.73} = 11.5 \text{ lb.}$$

Had the supplier's tank been at a higher pressure so that P, had been greater than P, then vapor would have entered your truck and the quantity would be deducted from the quantity forced out by the liquid when it entered.

The volume removed from the tanks as the liquid enters is calculated as follows:

V becomes the volume displaced and is equal to the number of gallons transferred, divided by 7.48. Assume 1900 gal. are transferred to your truck. This equals 1900 ÷ 7.48 = 254 cu ft. P<sub>3</sub> remains at 35 psig or 48 psia.

$$\frac{P_{\text{3}}}{Pa} \times \frac{254}{8.73} = \frac{48}{14.7} \times \frac{254}{8.73} = 95 \text{ lb.}$$

The total returned to the supplier's tank is 95 plus 11.5, which equals 106.5 lb. The total weight of fuel, 1900 lb, loaded into your truck is about 9000 lb. The 106.5 lb is about 1.18 per cent. If the pressures in both containers were equal at the start of transfer, say 35 psig, then the loss to you would have been about 1.05 per cent.

The loss to you will increase with higher temperature. It will increase as the propane content increases because of higher pressure.

You can overcome this loss by buying on the weight base. Weigh your truck in empty and out full, then any vapor returned to the supplier's tank is not weighed out to you.—Ed.

#### Commercial values of butane and propane

Missouri

I need some information on the Btu contents of a gallon, cubic foot, and a therm.

I have run across several different figures ranging from 98,300 Btu per gal., to 91,800. The same holds true for a cubic foot. However, they all seem to agree on 10,000 Btu for a therm.

Can you give me a set of figures most recognized by the AGA and other associations or companies throughout our industry? Our gas is supplied from the midwestern oilfields of Kansas, Oklahoma, Texas and New Mexico.

I would also like figures on specific gravity in comparison to air and liquid.

H. A. F.

It is difficult to establish a set figure denoting the heating value of a unit volume of any commercial petroleum product because the analysis of the commercial product is not consistent. For instance, a carload of commercial propane may contain 95 per cent propane, 1 per cent ethane (a lighter weight product), 3 per cent butane and 1 per cent of various other components. Another carload of product may have more or less propane and, similarly, different proportions of the other products.

The therm is consistent because it is a unit of energy measurement, the same as a Btu, a calorie, a pint or a bushel. It is defined as 100,000 Btu.

You will not find the heating values for a gallon of liquid propane or a cubic foot of propane vapors to be consistent. The best that can be done is to select an average value with a tolerance plus and minus for reasonable variations in the commercial product.

The LPGA recently worked out such a set of average figures and has published them. They are as follows:

#### Approximate values contained in LPG

	Butane	Propane
Btu per cu ft	3,280	2,516
Btu per lb	21.221	21,591
Btu per gal.	102,032	91,547
Cu ft per lb	6.506	8.58
Cu ft per gal.	31.26	36.39
Lb per gal.	4.81	4.24
		—Ed.

#### Steady load needs extra power

Florida

We would like the relative figures on powering a 5-hp engine with electricity as compared to the cost of using LPG.

S. B. 1

We have only fragmentary information on operating costs of these small engines with propane. If they follow the same pattern as larger industrial engines, you will not be far off in figuring that energy cost will work out to about a 10:1 ratio. That is, if electricity is 2 cents per kwh, propane will just about balance the cost at 20 cents per gal.

Do not make the mistake of using too small an engine for a steady load such as pumping. The best balance of efficiency and durability is obtained if the engine operates at about 60 per cent of its full-rated horsepower. If the job requires 5 hp net, the engine should have a maximum horsepower of not less than 8.—Ed.



#### Do not check gas leaks with an open flame

Colombia

We, as manufacturers of gas appliances, are interested in some means of detecting gas leakages in our products by sight while testing.

We have been told that it is possible to add a certain color to the propane gas without affecting its other properties, making it useful for this purpose

J. R. G.

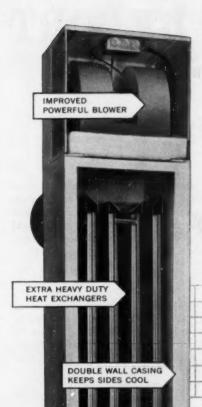
We do not know of any product which will color gas to aid in detecting leaks in appliances by sight while testing. I have checked with the technical editor of the magazine GAS, the technical department of the local utility, and with the American Gas Association testing laboratory here in Los Angeles. None of them knows of any such product.

Appliance manufacturers test-operate all their appliances before they leave the assembly line. While the appliances are operating they check over all the pipe, tubing, and fittings on the appliance with a torch.

I expect you may think this odd, since checking for gas leaks with an open flame is considered a dangerous practice, which it is in most instances. However, on the assembly lines there is a quick-acting shutoff valve near the man making the test, and only a small amount of gas can be trapped in the piping.

The appliances are in an open area away from walls and other barriers which makes piping inaccessible, and the flame checking is done at the start of the test before much gas has an opportunity to escape. The areas are also well-ventilated.

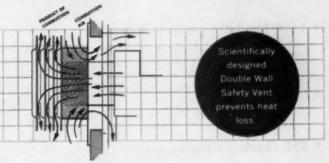
Checking with a flame in a home or other building where gas may have been escaping for some time and has accumulated in a confined space is dangerous. Also, most piping is adjacent to combustible walls, floors, or other materials and, if there is a leak, the flame could start a serious fire.—Ed.



## efficiency tests prove Empire direct vent line gives 7.8% more heat

NO CHIMNEY

NO DUCTS



Now, Empire proves gas heat is the *only* modern, economical heat. These "hidden" reasons, proven and tested, makes selling easier and quicker. A complete range of models are available... from 10,000 BTU to 70,000 BTU.



Ideal for New Construction, perfect for Replacement







MAIL THIS COUPON TODAY

EMPIRE STOVE COMPANY
Believille, Illinois

Quick! Send more details on the DV line.

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DEALER NAME

ADDRESS

CITY

ZONE

STATE



#### WASHINGTON REPORT

by NEIL REGEIMBAL, Washington Editor

#### \* What to expect from Kennedy

Broad changes are in store for the country under the new Democratic administration of John F. Kennedy. But they probably won't be as drastic as the new President would like; many of his proposals will be watered down in Congress. Here's the outlook on some major issues: Taxes will be "reformed," without any broad business cuts, although some lower-income taxpayers and small firms may get help; the wage-hour law will be extended and the minimum raised a little, and spending will be increased.

#### \* Look for more pump priming

The Kennedy administration will begin trying to throw props under sagging industries as soon as it takes office in January. The new President will first try to lift basic industries, particularly steel, out of the doldrums with new easy-money policies in the hope of spurring private investment and sales. He will try to get from Congress new programs of government public works, school construction, home construction, and similar projects by which he hopes the government will spur the economy.

#### \* FRB starts easing credit

More funds for business loans are becoming available. Even more are in prospect. Recent credit-easing actions of the Federal Reserve Board started the flow by releasing an extra \$2.1 billion. The new Kennedy administration intends quickly to try to further loosen credit for business and lower interest rates.

#### \* REA, TVA expansion seen

The new Kennedy administration won't make any moves to remove the subsidy from present REA co-op interest rates, or take steps to put farmer co-ops on a more competitive basis with private business, if campaign and post-election statements are followed. In fact, an expansion of both types of co-ops and the TVA as well is in sight under renewed government support. (Details on page 81.)

#### \* LPG may soon be stockpiled

Government may be buying and storing huge quantities of L.P. gas before too long. A new study will get underway soon aimed at developing a stockpile of products to support recovery of the economy after a military attack on this country. L.P. gas has already been declared an "essential survival item." Problem will be to convince Congress to put up funds for storing these items, locate sites, and develop methods. In the past, stockpiles have been filled with items needed to fight a long or short war. New stockpile plan assumes we would win a conflict, and materials will be needed to help us get back on our feet.

#### \* Slight increase in home building forecast

There'll be only a slight increase in home building in 1961 if government forecasts are correct—and unless the new Kennedy administration boosts government programs to spur home building. Government housing experts say that under present laws and programs, construction of new homes will rise to about 1,350,000 in 1961, compared with 1,300,000 this year. Total new construction of all types is expected to rise four percent to a record \$57.3 billion in dollar value.

## RFou

Four Cures for Obsolitis\*

\*A serious malady affecting owners of obsolete delivery equipment.

Here are four sure ways to cure obsolitis, the dangerous "affliction" that may be cutting into your profits. If your equipment runs up heavy repair bills each year, or carries less payload than you need for maximum profit, here's good news for you: The Mississippi Tank line is designed with your transportation problems in mind. No matter what you seek in L-P Gas equipment . . . top payload . . . faster pumping . . . economy . . . durability . . . there's a Mississippi Tank model to fit your needs. You're losing money every day you operate obsolete equipment, so contact Mississippi Tank right now about your requirements.

#### T-1 LOAD-KING TRANSPORT

Extra pay oad and strength at no increase in gross weight in this model. Exclusive design assures perfect weight distribution and maximum loading. Available in 7,690 to 11,090 w.g. capacities custom built for your area of operation.



#### T-1 TITAN

Its extra capacity—3,075 w.g. on a single 18,000-lb. axie enables the Titan to pay for itself in a matter of months. Lightweight T-1 steel construction, 76½" inside diameter tank, fully X-rayed and sand blasted.



#### TITAN, JR.

2,600 w.g. capacity—weighs less than 25,000 lbs. loaded! The secret is Mississippi Tank perfect-balance design. 72" inside diameter tank, fully X-rayed and sand blasted.



#### MISSISSIPPI TANK COMPANY

INCORPORATED

Hattlesburg, Miss.

JUniper 3-0242



#### ATLAS DELIVERY

Quality designed and precisely balanced for maximum payload capacity at low cost. Finished with many deluxe features you'd expect to find only in higherpriced models. Capacities: 2,000 to 2,400 water gallons.

#### Mail coupon for literature on the latest in profit-designed equipment

#### MISSISSIPPI TANK COMPANY, Inc. Hattiesburg, Miss.

BPN-1

Without obligation, RUSH literature on:

- ☐ T-I Steel Transports
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- Domestic and Bulk Storage Systems

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Company .....

\* 11

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## STEADY PRESSURE

JOHN E. MITCHELL COMPANY

## Beyond the Mains

By WILLIAM W. CLARK . Editor



#### Desert weather report: cloudy but clearing

OLDTIMERS WHO ATTENDED the National L. P. Gas Council's board of directors meeting in Phoenix Nov. 28-29 were just about unanimous in agreeing that it was the most enthusiastic board meeting they had witnessed. Turnout was high and attendance was excellent.

One reason for this was the lack of distractions, other than the purely recreational. In the past, board meetings have been held in conjunction with LPGA conventions. There was always too much going on elsewhere to allow delegates to give the council sessions the attention they deserved. So the success of the Phoenix meeting was interpreted as proof that the conclaves should no longer try to ride on someone else's coattails. They should stand alone.

It would be more complimentary to look at the other side of the coin and observe that the meetings have proved that they can stand alone. No one need apologize for being only somewhat successful in trading on somebody else's attraction when he himself can draw such top-flight delegates to his own show.

Considering the interest shown, and harkening to the sincere praise for President Frank Carpenter and his team, one might conclude that the council was closing the books on the greatest year in its history. Unfortunately, such is not the case. Financially, it was something of a dud. As Carpenter reported rather grimly, it was the first year in the past six that the council has not grown. It was necessary to dip into treasury surpluses to meet the year's commitments. For 1961, every program across the board had to be crimped. All told, about \$70,000 was scissored out of the budget, and not one of the proposed programs was spared.

Still, the bare bones of the financial report can be misleading. All the losses in revenue were traceable to suppliers, many of whom have been sharing in the general business downtrend of the past months. On the other hand, there was actually an increase in dealers' contributions, though a modest one, and far short of what was needed to offset the decreases. A good case could probably be made for the argument that, given a business upturn and a continuance of the current growth in marketer support, the council will soon be on the move again toward its million-dollar-a-year goal.

The most heartening implication of the small gain in dealer activity is that their awareness of the importance of a national promotion must be growing. If there's any place where one would expect such awareness to be lacking, it must certainly be at the local level. Dealers must still ask. "What's in it for me?" Even the larger regional marketers stand to gain only indirectly from programs that have no appeal, or application, within their own market areas. In committee they fight hard for the projects nearest to their hearts and pocketbooks, which is to be expected. But their continuance in the program shows they have an appreciation for what Don O'Meara, the new president, terms a promotion "umbrella" over their local-level efforts.

The L. P. gas industry must still create a national "image." That's a tough thesis to sell, and when you start translating it into specific programs, regional and individual differences start popping out like weeds in a new lawn. With only \$500,000 to spend across the continental U. S., you just can't expect to please everyone.

What non-members may not realize is that there is as much disagreement over specific plans within the group as there is outside it. Members argue and battle till the air turns blue, but when they're finished, they accept the necessary compromises with as good grace as possible and close ranks.

Maybe in the end they look at it somewhat like we all look at the United Nations; it ain't perfect, but it's the best we've got. And the best way to improve it is to be a part of it.



#### 55 Tons For You

The last of four major presses was secured in place this week at the Cylinders, Inc. new plant in Linden, New Jersey . . . for your service.

Weighing 55 tons, this master press was sent almost 1,000 miles from the Linde Plant at Speedway, Indiana, to give you the quality, service and dependability you have enjoyed from Linde.

For the first time in the LP field an entire plant is being designed specifically to serve you.

For the first time a company has been formed specifically to produce cylinders for you.

Be sure to visit our booths 181 and 182 at the LPGA Convention, April 30-May 3, 1961, Conrad Hilton Hotel, Chicago.

Cylinders, Inc. Successors to the propane and refrigerant cylinder manufacturing business of **Lude** Company. Division of Union Carbide Corporation.



1200 WEST BLANCKE ST., LINDEN, N. J.

# The SHAPE of Tomorrow

WILLIAM W. CLARK . Editor

THE CONSENSUS among those in the best position to know is that the L. P. gas industry is now "mature."

In terms of size, continuity, and importance in the economy, that may well be. But if "maturity" means stability, complacency, staidness, or a "leveling out," maturity is not the word.

The industry is undergoing deep changes—some revolutionary— just as is the total economy. Dealer organizations are in a state of flux. Marketing methods are changing. New patterns that are now emerging in supply and transportation were unthought of a decade ago.

Forecasting the end result of these changes, five or ten years from now, is a hazardous game, but one which every businessman must play. It's a little like horse racing: if you're going to the track, you might as well lay a bet.

Taking yesterday's performance and today's more apparent trends, here is the way the future looks to a number of the industry's leaders:

Fuel sales will continue their rapid rise. One expert looks for them to double by 1970, hitting 20 billion gal.

More and more independent dealers will come under the wing of fuel suppliers. Many, many

others will sell out to the fast-growing chains. But a great body of independent, fairly small, dealers will continue to thrive alongside them.

Market diversification will increase, but on an individual basis. Many dealers will continue to serve the base loads, but many others will reach out into new markets. The sum total will be more diversification, across the board.

The gas vs electricity squabble will grow in intensity. The chips are already down. All segments of the gas industry will begin pouring more and more into sales promotion, locally and nationally, to halt electricity's advance. Without this effort, electric appliances could forge into the sales lead.

Utilities and dealers will accept the implications of their partnership, and will unite at the local level—and will work more closely at the national level—to stem the electric tide.

L. P. gas dealers will become more aggressive appliance salesmen; fuel peddlers will fade away.

It will become increasingly difficult to differentiate among dealers, marketers, producers, and utilities. Many of the chains will become more and more like utility operations.

From what we can learn, the various aspects of the business will look something like this:

#### The

SHAPE

#### of Tomorrow

#### THE RETAIL DEALER

Individual dealers will continue to grow, loadand customer-wise. This has been the pattern. We can find backing for this prediction if we examine areas that are older and better established than the rest of the country. Specifically, take California, which is ahead of much of the country because of early availability and market development.

R. J. Munzer, President of Petrolane and of the LPGA, gives this rundown¹ on the present situation in the Golden State: The average marketer (including branches of chain operations in the category) has 2000 customers; he owns 1200 bulk tanks and 800 cylinders; his annual sales are 1.5 million gal.; his capital assets total \$100,000, current assets \$60,000.

Across the board, these statistics are between one-fourth and one-third higher than the national statistics. Therefore, it is reasonable to predict that dealers elsewhere will grow to the California size before long.

The biggest impediment to such growth is the lack of capital. Some dealers may eliminate this hurdle by selling all their tanks and reducing their investment in customers. The majority, however, will recognize that customers are their only real assets. Those who have considered selling out to the chains have already found this to be true.

So, overall, there will be more of an effort to hold customers to them, by owning the tanks and leasing them to the users. More and more dealers will turn to customer meters to help make this clientele even more secure. While this will increase their investment in both customers and product inventory, it will reduce plant storage. Dealers will depend more and more upon their fuel and equipment supplier for credit to finance this.

With meters, more dealers will adopt degree-day systems because this will give them close control over deliveries, and will help further in reducing plant storage.

Dealers will become better and more aggressive appliance merchandisers. Improvement has already been noted by a number of appliance manufacturers. There are several reasons for this.

First, it is becoming obvious that without an appliance selling program, a dealer is like a car with three wheels. Management experts say that you cannot expect to hold your domestic business without

an appliance selling arm. Appliance selling can also help carry the load of overhead. And without a stock of appliances, a dealer is at the mercy of the straight appliance dealer.

Despite all the talk about discount houses, the appliance dealer still sells 51 per cent of all gas ranges, 54 per cent of all gas dryers, 63 per cent of all gas water heaters.<sup>2</sup>

All of these dealers, except those who are also in the L. P. gas business, are "being made love to" by the electric utilities and manufacturers. More and more, LPG dealers will have their choice between vying for this affection (what do you have to offer?) and becoming strong merchandisers themselves.

Big companies are leading the appliance selling parade. Even those who are not doing an outstanding job of merchandising them are at least carrying them. Independents who would compete successfully with these operations will follow suit.

#### CHAINS

As we said, dealers will find they can compete successfully and thrive alongside the large chains. The principal advantage the chains have are risk capital and, perhaps, more efficient and less costly fuel supply. They do not necessarily have any greater compunctions about cutting price than any independent dealer. But they lack the free-wheeling abilities of the independents.

Snap decisions at the local level are almost impossible to make in a chain operation. While they have the power and the financial backing to play the price cutting game if need be, their use of these weapons in years to come is more likely to be defensive rather than offensive.

Chains will be looking for orderly growth and stability. They will tend to become utility-type operations, serving a fixed—but growing—clientele. They will standardize on policies and procedures throughout all their branches. They will pay closer attention to inventories as they go, standardizing on plant and rolling equipment where possible.

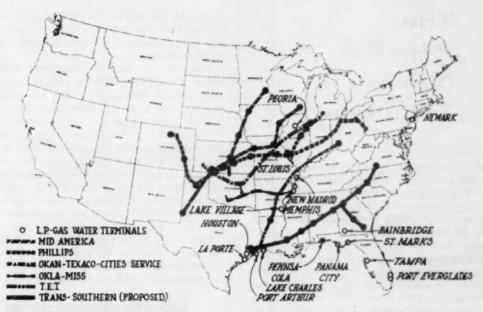
This will not give rise to any wildfire growth. Indeed, right today in a number of areas, the local branch is smaller than its independent competitors. But it will give rise to better planning in exploitation of "secondary" markets. Chains will be able to add specialists to their staffs, and to attack these additional markets more scientifically. In carburetion and flame cultivation, for example, they will be able to conduct coordinated area programs, and will be able to give help and direction from the top.

This will lead to a higher degree of market saturation. If their customers do not increase in leaps and bounds, their load—when they start concentrating on such fabulous markets as flame cultivation, for example—will.

They will recognize more clearly the need for

Speaking before the California Natural Gasoline Association in Los Angeles, Oct. 13, 1960.

<sup>2.</sup> Judson S. Sayre, head of Norge Division of Borg-Warner Corp., before the Pacific Coast Gas Association, Phoenix, Sept. 21.



Pipeline transportation has increased 146 per cent in five years

diversification. This is a fact of today's fast-moving economy. Single-load businesses may falter, except where the management becomes a team of true experts who can do a superior job of saturating their own particular market or markets.

This diversification by the chains is likely to take them into allied fields. Suburban Gas Service in the West now has its own underground storage. National Propane in the East is putting its own gas into Mid-American Pipeline right at the source of supply. General Gas has a large corporate complex which produces, transports, and sells fuel, sells appliances, and makes tanks—among other things. United Petroleum Gas (now a part of Diversa) has already established a natural gas utility business. Petrolane in the West has set up a utility division to enable its piped branches to become the natural gas utilities when—and if—natural gas comes.

There is also a trend toward utilities getting into the L. P. gas business. United Gas Improvement Co., an old-line company headquartered in Philadelphia and operating Philadelphia Gas Works and other Pennsylvania gas utilities, and having engineering and construction arms, bought out Art Bone's Eastern Propane and made it the nucleus of UGITE, a group of LPG operations surrounding its utility market areas. Northern Natural Gas Co., a gas transmission company headquartered in Omaha, which already had its own production activities and a retailing distribution utility, Peoples Natural Gas Co., serving a number of Midwestern cities, has now set up an LPG retailing division. Milwaukee Gas Co. has also entered the LPG business.

Suburban Propane in the East manufactures some of its own appliances, is now considering adding additional lines. Individually, chains will continue to grow. We now, for the first time, have a truly coast-to-coast chain—Suburban Gas Service of California, which recently bought out De Kalb Gas of Georgia. The best predictions we have had on the probable extent of this are that perhaps half a dozen nation-wide chains will ultimately emerge. This does not mean that regional chains are a thing of the past. But in today's economy, the emphasis in big business (and these chains are becoming big business) is more and more on financing, on tax advantages, and on efficiency through centralization of certain functions.

Chains will continue to centralize accounting, general management, and sales direction.

Most independent dealers need not suffer from this kind of competition. Their flexibility will stand them in good stead, as will their ability to give personalized service, and their identification as "home town" businesses.

Chains will have their problems. They must face, and overcome, the public's suspicion of "big business." They will encounter the same public relations problems that have plagued utility companies for years.

Too much diversification can also be hazardous. It tends to divorce sales management from individual markets. It is doubtful, however, that LPG chains will become sufficiently diversified in the next half-dozen years for this problem to arise.

#### SUPPLIERS

The lines that separate suppliers from retail markets are becoming increasingly difficult to define. More and more "independents" are becoming franchised, and more will fall into line, in part

#### The

SHAPE

#### of Tomorrow

because of the capital investment squeeze. Many others are going back to the directly owned type of operation that characterized this business in the early days.

Suppliers are working hard to tie their retail markets to them with such things as "branding" programs (such as "Truflame"), cooperative advertising programs, sales aids, financing, etc. They are also building product identity. Many suppliers are joining the earlier leaders in pushing for service station-type retail outlets. This trend is bound to continue—again, because of the capital investment squeeze. It is one more important factor in making the industry more stable. Stability will extend from the source of supply all the way to the ultimate consumer.

Suppliers—that is, producers—will recognize more clearly their heavy stake in the L. P. gas industry. L. P. gas now represents more than 50 per cent of all natural gas liquids processed.<sup>3</sup> The sales gains made by L. P. gases continue to outstrip the over-all sales gains of the petroleum industry three-fold.

Demand for LPG for non-retail uses will grow. Diversion of product to chemical feed stocks, synthetic rubber base stocks, and other non-retail uses will siphon off increasing volumes in the years to come. Recent gains in these uses clearly indicate this. From 1958 to 1959, its use for chemical feed stocks shot up 33 per cent, for synthetic rubber base stocks, 38 per cent.

In citing these figures, Tucker<sup>3</sup> pointed out that they are not to be completely relied upon as indicators of future growth. Chemical base stocks may contain as much as 30 per cent or more of ethane and/or ethylene. And when analyzing rubber base stock demand, it should be remembered that 1958 was an abnormally low year, a poor one to use as a base for projecting growth.

Despite these gains, retail uses continued to move steadily upward. During these same years, domestic and commercial sales have just about stayed even as a share of total sales. Over the past five years, this share has only dropped a percentage point, from 45.8 to 44.1. Internal combustion sales have also increased in almost direct proportion. Industrial uses—not strictly a "retail" type of market—have tailed off rather sharply.

The diversion to non-retail uses threatens to take

butane off the market, or at least price it out of the market. But with the rush to open up new sources, propane will continue in good supply for years to come.

Some 38 new gasoline plants were either completed in 1960 or will be on stream Jan. 1, 1961. Nine other plants have been or will be expanded to recover more LPG. Between them, these sources will add 1,850,000 gal. per day to supply.<sup>3</sup>

If demand warrants, Canadian gas can be moved into the U. S. market. Export of natural gas from the North has already been approved; this will make more gas liquids available, more than Canadian markets can use. By the end of 1962, production of propane is expected to be somewhere between 8900 and 17,000 bbl per day. Butane production should just about match this figure.<sup>3</sup>

Four applications are now under consideration for the construction of a gathering system and lines to bring L. P. gases into the U. S., either in the Midwest or the West Coast.

#### TRANSPORTATION

Here is one area where the pressure is on for greater efficiency and economy.

These pressures have already brought on a marked shift away from the use of tank cars. Ten years ago, railroads moved 59 per cent of all products. In 1959 they carried 38 per cent. The trend will continue.

However, they are not likely to carry any less volume than at present. From 1950 to 1959, the number of tank cars in service almost doubled, and the amount of product moved increased by almost 50 per cent. They simply did not keep pace with the astounding increases in total sales.

Tucker predicts the amount of product carried by rail will level out at about three billion gal. per year, only slightly less than is now carried.

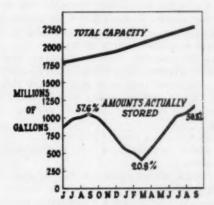
There will also be a continuation of the trend toward bigger cars. Tucker foresees an increase in cars in the 20,000-gal. range, with 30,000-gal. sizes also becoming more commonplace. Refrigerated tank cars in sizes up to 50,000 gal. are also a distinct possibility.

Tank trucks will continue to take a larger share of the load. From 1955 through 1959, the percentage carried increased from 50 to 62 per cent. Tucker expects the same rate of increase to hold for the next five years.

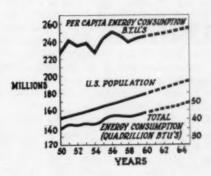
There are a number of reasons for this, among them:

• Tank trucks will keep on getting bigger. There will be more unformity in state laws, which will be particularly helpful to interstate truckers, who today are limited to the laws of the most restrictive state in which they operate. Tucker believes the laws will permit transports using today's design features to be built to haul as much as 11,000 wg. "Mechanical design improvements of both tractors and trailers may even increase this to 11,500 to 12,000 gal. If we really look to the future, we can

Figures and projections made by Paul Tucker, assistant director of public affairs, Phillips Petrojeum Co., speaking before the CNGA in Los Angeles, Oct. 13.



Total underground storage capacity is still greater than the amount utilized.

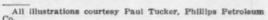


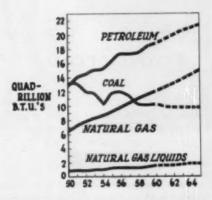
Per capita energy consumption is on the rise again, totaling nearly 260 million Btu's.

anticipate combination units, developed for special runs over turnpikes, transporting up to 20,000 gal."

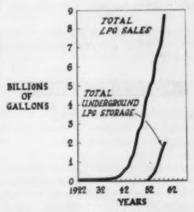
- The trucking industry is still young and aggressive.
- The interstate highway program will improve the roads.
- Increasing use of water and pipeline transportation methods will require a greater use of highway transports.

Water transport has also cut into the rails' share of this business. "In the past five years (Tucker), world-wide L. P. gas water transportation capacity has increased more than 500 per cent. "It has nearly tripled in this country alone. Looking to the future, we fully expect water transportation to continue to increase. The next five years will see large volume transportation and storage under re-





U. S. consumption shows petroleum products gaining rapidly, at a steady rate.



The curve and growth of underground storage versus sales is almost duplicated.

frigerated conditions—in both domestic and worldwide service." Phillips has two dual-service barges under construction which can transport either AA at any pressures from 0 to 40 psig under refrigeration.

Movement of product by pipeline, which has increased 146 per cent in the past five years,<sup>3</sup> will continue to grow. The new Mid-America line<sup>4</sup> and the proposed Trans-Southern line<sup>5</sup> will more than double previous deliverability.

Pipelines are, generally speaking, the most economical means of moving product. That means we can expect more and more and more, up to the limits of market demand.

Another possibility: piggyback movement of transports on rail cars. Under presently proposed plans, this sort of fuel movement would be at the

<sup>4.</sup> See BUTANE-PROPANE News, December 1960, pages 29-33.
5. See BUTANE-PROPANE News, November 1960, page 52.

#### The SHAPE

#### of Tomorrow

producer level. But other plans in the wind would make it possible for marketers to use piggyback themselves—possibly very advantageously.

#### STORAGE

Large-volume storage is more and more becoming an integral part of the supply and transportation picture. Today there's about 45 million barrels of storage for butane and propane.<sup>3</sup> As this increases, production during the summer months can be stepped up.

Aboveground storage totals nearly 200 million gal.—nearly a seven-day supply for the total market.<sup>3</sup>

Refrigerated large-volume storage is inevitable in certain areas where underground storage cannot be developed.

#### FUEL DELIVERY

The emphasis on speed will continue. Transports will be loaded and unloaded at speeds up to 500 gpm. Transfer to customer tanks will range up to 100 gpm.

In plant and route operations, the big, growing companies will emphasize improved efficiency. Bulk plants will be redesigned for faster product handling. Larger lines will be used and 3- and 4-in. connections will become standard in many places.<sup>3</sup>

#### THE MARKETS

It's popular now to refer to the "Golden Sixties" as "tarnished." The performance of the total economy in the first year of the decade was a distinct disappointment.

In our industry, fuel sales continued to increase. Whatever luster was lost, at the market level, was in appliance and utilization equipment sales.

One year does not make a decade. But there is more trouble ahead. As Sayre pointed out, we cannot look for growth in the next few years to be automatic on the basis of the population "explosion." Actually, the number of people between the ages of 25 and 45 is decreasing, and should hit a low point of about two million under the 1959 figure by 1965. This group is historically our biggest market for consumer durables.

Nevertheless, markets can better be expressed in terms of opportunities than numbers of people. The industry is a long way from market saturation now. There is ample evidence that concentrated market cultivation can overcome unfavorable market factors.

For example: GAMA recently reported that, while new-home construction in September was down 17 per cent from August, sales of gas furnaces and boilers were up 9.1 per cent. Some of this increase was seasonal, of course. But in comparing September records with those of a year ago, GAMA found that while new housing starts were off 29 per cent, shipments of gas central heating equipment were down only 15.8 per cent. A similar spread between construction and equipment sales was noted for the entire year.

About the same ratios were evident in gas range shipments.

GAMA officials concluded that the gas industry's emphasis on home modernization was the difference. This explanation was further substantiated by the sudden rise in shipments of conversion burners, which have been sliding for years. These went up 40 per cent from August to September.

Modernization is an area where LPG dealers will be able to shine in months and years to come. With millions of homes now getting into the 10- and 15year age brackets, this market is sure to grow.

Electric competition will get rougher and rougher. The new administration in Washington is dedicated to big power projects, and further expansion of the REA Co-ops. Electric utilities are eyeing LPG customers with envy. In spite of some celebrated failures in electric heating, Betty Furness and frids will continue to drive inroads into the housel and market.

Even if they should succeed in making gas the No. 2 fuel in the home, which is not a certainty by any means, there are many other bright new markets that LPG dealers have barely scratched. They will never want for opportunities. It's up to them to cultivate each one.

Here's the way Rudy Munzer (speaking, of course, for California—but he could be speaking for the U. S.) sums up the market outlook for the next ten years:

"Our domestic demand, in my opinion, will grow at about the same rate experienced in the past decade, which gives us approximately a 26 per cent increase. Because of the fact that our marketers have reached a level where more time, energy, and money can be directed toward research and sales development, and traditionally because we turn to other types of activity when the domestic rate of growth slackens, I believe we can expect an accelerated rate of growth in the industrial, commercial and carburetion applications. I forecast that this segment of our industry will increase by 85 per cent in the next 10 years."

A reprint of this article can be obtained by writing on company letterhead to The Editor, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Cal.

"A baseboard gas heater"

"Non-integral water heater combinations"

"A truly 'all-gas house of tomorrow"

"Flameless gas cooking units"



## You won't recognize the gas appliances of tomorrow!

T. L. ROBEY • Director of Research American Gas Association

THE FUTURE OF THE GAS INDUSTRY depends upon our making all appliances and equipment better and more economical—in essence, "Tailored to the task."

This is one of the prime goals of the American Gas Association's PAR (Promotion-Advertising-Research) program. While the scope of PAR is much broader than utilization alone, it does receive a large share of our attention.

Currently in the field of domestic utilization research, AGA is sponsoring work on flexible appliance connectors, new range top burners and ignition systems, disappearing high-speed oven broilers, space saving over/under built-in oven and non-integral water heater combinations as well as significant advances in ignition technology. The efforts of this group have resulted in many advances in domestic gas appliance design.

The electric industry has been making considerable headway in obtaining a larger share of the localized or incidental area heating market. In a move to offset this competition, the Domestic Utilization Research Committee has been working on new and improved methods of heating localized areas in the home. The emphasis in this area of research has brought about the development of a prototype baseboard gas heater. This unit can be easily installed since all the controls are in the wall. Undoubtedly, this unit will have appeal to families who object to customary gas space heater design.

The Industrial and Commercial Gas Research Committee, as the name implies, is mainly concerned with appliance and process improvement. Their research activities have included the design of a forced convection gas bake oven which has greatly increased food preparation capacity, and the evaluation of heat transfer and waste heat recovery in industrial furnaces.

Predictions for the future indicate that many more foods will be frozen and pre-processed. These developments will lead to considerable modifications in food preparation practices as they are known today. For these reasons the Industrial and Commercial Gas Research Committee is investigating new methods of preparing food in commercial establishments.

A good example of PAR-Research in action is the committee responsible for Air Conditioning Research. This committee was formed about five years ago when the industry realized its extreme need for a competitive air conditioning unit. Obviously the intent of this group was to improve the industry's competitive position in the field of air conditioning and in so doing fill in the gas industry's off-peak summer gas loads.

Since the formation of this research group, the long-life natural gas engine has become commercially available; an open-cycle absorption system and a free-piston air conditioning unit has been developed to a prototype stage and are now under final development.

#### What is PAR?

We live in a dynamic, impatient world-a world which is constantly surging ahead economically, socially, as well as technologically -a world in which to stand still invites failure and where progress is synonymous with survival - a world in which everyone is engrossed with the future. We have grown to accept remarkable technological accomplishments as everyday occurrences. We realize that these technological accomplishments have resulted from the vast resources that have been poured into research activities in recent years. In addition, we have learned that if we expect to prosper in the future, we must be prepared to invest in that future by supporting research activities today.

In 1944, the AGA's Post War Planning Committee realized that if the gas industry expected to prosper and compete with other sources of energy, it must be willing to invest in that future by supporting a research program. They felt that the best and most economical method of attaining this goal was by cooperative means; therefore, they initiated the PAR Plan.

The purpose of the PAR Plan, as the letters imply, was to handle the national aspects of promotion, advertising and research for the gas industry. Essentially, the objective of PAR-Research is to improve the competitive position of the gas industry through technical means.

The PAR-Research program is sponsored by subscription from cooperating gas utilities and transmission companies. This program, like all AGA activities, is guided by committees composed of gas company representatives.

Naturally, no one organization can meet the many and diversified research needs of this program. Therefore, PAR-Research is conducted at some 20 agencies, institutions, universities, government bureaus and cooperating manufacturers and gas companies. More than 100 research specialists are working directly on our problems. It is the responsibility of the AGA research staff to coordinate these research activities and act in a liaison capacity between the various research organizations and the committees. In addition,

it is the responsibility of the AGA research staff to maintain constant awareness of what others are doing, how it affects us and to take whatever steps necessary to alert the gas industry to developments that will alter its competitive position.

Since the PAR-Research program began some 200 reports have been made available to the gas industry. These reports range from the most erudite mathematical studies to development of prototype hardware. In many instances, these reports have contributed to the development of new appliances or the improvement of existing ones.

Today, in utilization research fields alone, there are two dozen projects underway. They cover the following:

- · Gas appliance connectors.
- Domestic range broilers and ovens.
- Reduction of heat losses to surrounding atmosphere from cooking operations.
- Combination top burners and thermostatic controls.
- Domestic range grate design and appearance.
- Non-integral storage tanks and water heating devices and other non-conventional water heaters.
- Cathodic protection of steel in potable hot water.
- Gas appliance vent system design.
- Forced warm air furnace heat exchangers.
- Effects of cyclic temperatures on heat exchanger life.
- Appliance combustion and draft hood spillage safety controls.
- Heating localized areas in the home.
- · Ignition of gases.
- · Gas lighting.
- Domestic gas incinerator design.
- · Gas clothes dryer design.
- Balanced flue and power venting.
- Oven environment for baked foods.
- Commercial gas kitchen ventilation.
- · Infra-red energy production.
- · Glass tank boosters.
- Reduction in sand core and shell mold baking time.
- · Vacuum-heating furnace.
- · Reconstitution of frozen foods.
- · Gas-fired commercial toasters.
- Gas power burner without external power.

In addition, a five-ton integrated engine compressor for residential air conditioning use is now being field tested. This group is also sponsoring the development of a five-ton heat pump and condensing unit; the study of utilizing gas turbines in industrial air conditioning applications; the development and test of a 50-ton engine-driven heat pump; and the investigation of methods of improving operating characteristics of absorption air conditioning units.

In addition to the various utilization research projects mentioned, PAR-Research is working on methods of storing liquefied natural gas in large pre-stressed concrete tanks. Preliminary estimates pertaining to this method of storing liquefied natural gas, which is also applicable to the storage of L. P. gas, indicate it to be more economical than present methods of large volume storage.

PAR-Research is currently sponsoring several projects pertaining to methods of analyzing gas samples. These projects also include methods of obtaining quantitative and qualitative analyses of small amounts of sulfur compounds in the gas. Anyone in the industry familiar with odorization problems will certainly appreciate the importance of this work and will undoubtedly be waiting impatiently for results.

Many people, quite rightly so, associate the word "research" with the future—and it would be unfair not to mention our thoughts and goals for the future. We see a bright, fruitful, exciting future for the gas industry. We believe the gas industry is on the brink of the greatest revolution in its history.

Future gas appliances will differ considerably from today's models—they will feature higher capacities, more compact design, and they will be greatly automated. Wherever possible, these built-in appliances will become an integral part of the home. They may very well be gasfueled, flameless cooking units, water heaters, and refrigerators, sup-



plied with air-gas mixtures from a central source, based on the catalytic combustion principle. Portable plug-in type gas appliances will be widely used. Power venting will improve the efficiencies of these appliances and reduce the operating cost.

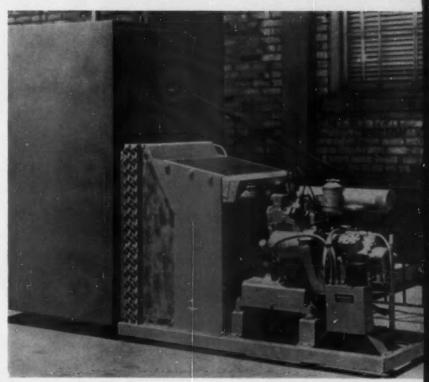
Gas appliances of the future will produce their own electrical energy from built-in thermoelectric and thermionic devices. For the most part, these devices will not only introduce new and possibly cheaper methods of controlling gas appliances electronically but will allow the individual appliance to be completely independent of outside power sources and, therefore, not subject to failure whenever the electric service is interrupted.

Furnaces and boilers as we know them will still be with us, but the trend in new equipment will include in one small package both heating and cooling with more advanced models really controlling humidity as well. New high temperature metals and coatings, capable of withstanding 2000 deg. F. or more, will have a marked effect on internal design and on heat transfer processes.

One of the most revolutionary devices presently being worked on is the "fuel cell." This device converts chemical energy directly into electricity and can be made to use gas as a fuel. The most remarkable characteristic of the "fuel cell" is the high efficiency obtained. It is entirely possible that the electric power in tomorrow's homes will be supplied by natural gas fuel cells and that the "all-gas house of tomorrow" will be just that, free of all unsightly power lines running in from the street.

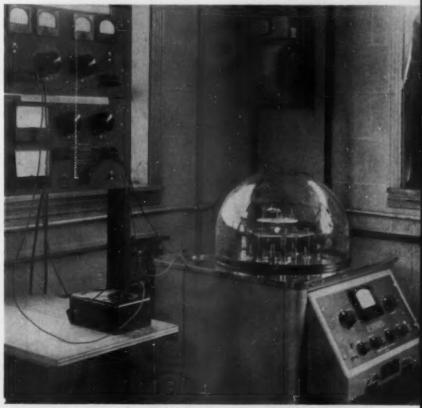
At this point one might say "Fantastic! Unbelievable! Impossible!" Not so! Every item mentioned in this article is either a project in the process of development or an "idea" backed up by a sound, scientific concept waiting to be brought forth and nursed into the development stage.

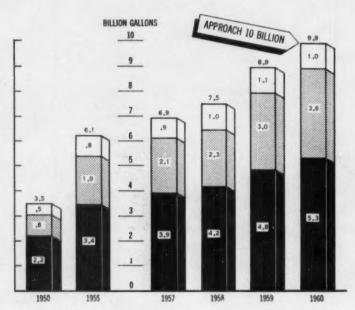
A reprint of this article can be obtained by writing on company letterhead to the Editor, BUTANE-PROPANE NEWS, 198 S. Alvarado St., Los Angeles 57, Cal.



The above photo shows the study of thermionic conversion of heat to electricity.







In the above L.P. gas industry sales scale, solid black represents domestic, commercial, and motor fuel; black dots on white is chemical and rubber sales, and solid white is all other sales.

#### 1960 sales neared 10 billion gal. mark

GEORGE R. BENZ, W. F. DeVOE, A. F. DYER

#### At a glance—

TOTAL SALES: 9,860,000,000 gal., an increase of 941,000,000 gal., or 10.5 per cent over 1959.

DOMESTIC AND COMMERCIAL: 4,328,000,000 gal., an increase of 393,000,000 gal., or 10 per cent over 1959.

MOTOR FUEL: 943,000,000 gal., an increase of 6 per cent over 1959.

INDUSTRIAL AND MISCELLANEOUS: 871,000,000 gal., about the same as 1959.

GAS MANUFACTURING: 137,000,000 gal., a decline of 25 per cent from 1959 sales.

CHEMICAL MANUFACTURING: 3,031,000,000 gal., an increase of 20 per cent over 1959.

RUBBER COMPONENTS: 550,000,000 gal., an increase of 7 per cent over 1959 sales.

DURING ITS 35 YEARS of recorded history the L. P. gas industry has consistently registered strong increases in "growing up" to a mature, major fuel industry. The year 1960 saw it reach another milestone in mature growth with sales approaching 10 billion gal.

Domestic and commercial. The largest market for L. P. gas is still sales to domestic and commercial customers. The sales were 3,294,000,000 gal. in 1958 and 3,935,000,000 gal. in 1959. In 1960 sales were 4,328,000,000 gal., a 10 per cent increase over 1959.

Domestic and commercial sales accounted for 44.1 per cent of the L. P. gas market in 1959 and 43.9 per cent in 1960. This slightly downward trend is expected to continue. The reason for the decline, in spite of the yearly increases in sales, is the mounting percentage being used for chemical manufacturing.

The 10 per cent rise in this category for 1960 sales resulted from increases in the use of LPG for home heating, cooking, water heating, and other domestic uses plus various agricultural uses.

The most important factor in domestic growth continues to be home heating beyond the mains. Weather, of course, is the greatest influence on this market. The trend to increased use of LPG for home heating is expected to continue as tank leasing programs, more efficent transportation, and similar factors make LPG more competitive with other fuels.

Agricultural uses. Crop drying and flame cultivation, tobacco curing, etc.—continue to increase.

L. P. gas appliances. Sales in 1960 fell short of the 1959 sales volume, as did gas appliances in general. The decrease reflected a general tightening of consumer buying and fewer new housing starts.

Domestic L. P. gas range sales declined to about 370,000 units, a 13.5 per cent decrease from 428,000 units in 1959. This volume represents 20 per cent of all domestic gas range sales, the same as in 1959. Built-in LPG unit sales held

the quality tells . . . the quality sells . . .

PRITTER

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Hallmark of Quality in Luxury Comfort

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#### THE PROFIT PARADE IN THE 60'S WILL BE LED BY **JANITROL SELECT DEALERS!**

Paced by the exclusive Janitral Select Dealer Plan that gives you action in place of promises... adds vital new depth and dimension to your Growth and Profit Future!

#### check-out the highlights!

- The Finest Factory Technical Training Program in the industry . . . tuition-free for Select Dealers!
- 2 Personalized Dealer Management Services . . . expert guidance in all phases of management, including sales training, recruiting, accounting, advertising, and engineering available to Select Dealers at no cost!
- 3 Dealer Information Service . . . authoritative newsletters, bulletins and periodicals keep Select Dealers up to date on latest developments in equipment, applications, service and merchandising slants!
- 4 Regular Regional Meetings . . . bring Select Dealers and Janitrol personnel together for stimulating discussions of merchandising, management, engineering and other subjects pertinent to dealer growth and profit!
- 5 Liberal Dealer Stocking Plans . . . assure the equipment required by Select Dealers will be on hand when needed.
- Free Retail Salesman Training and Aids . . . Janitrol helps recruit and train salesmen for Select Dealers. Provides proven, sales-clinching presentation manuals for cooling, heating and new home builder selling!
- 7 Protected Territories . . . Select Dealer Franchises in any market area are !imited. No "free-wheeling" franchising to choke off profits!
- 8 Powerful Planned Co-op Advertising . . . a year-round program of hard-hitting local level advertising and promotion prepared for you by experts!
- Powerful National Advertising . . . to create demand in your own local market for Janitrol products—back up your sales and promotion activities!
- Promotion Package Worth \$300.00 . . . for newly franchised Select Dealers. Includes illuminated signs, floor and window displays, colorful literature, demonstration kits, etc.
- Yellow Page Telephone Listings . . . reserved for you, as a Select Dealer, in your own local phone book under the JAN-ITROL headings.

- 12 Competitive Pricing . . . made possible by famous Janitrol advanced engineering and new automated production lines. Puts Select Dealers in the driver's seat with quality at low cost!
- 13 The Top Brand Name . . . Janitrol leadership in design and quality is nationally recognized and acclaimed. Over two million Janitrol units have been sold!
- 14 A Great Line . . . A Complete Line including the all-new 52 Series condensing units!



Now, a cooling line built to bring you new sales and profit opportunities . . . do away with installation and service headaches! The new 52 Series units have larger coils for higher efficiency . . . distinctive, prestige styling . . sun-shaded coils . . . weather-resistant finish . . . acoustically treated cabinet . . . 100% safety for children and pets. Top exhaust protects nearby plants . . Full A.R.I. Certification . . . operates with up to 125°F outside temperature!

Other quality products in Janitrol's full line include Oil and Gas-Fired furnaces in horizontal, vertical and counter-flow models . . . plus a special line of competitive equipment built for the high volume, new home market! In cooling, Janitrol covers the residential and commercial markets with economical, self-contained units; add-on, modernization units and a completely new series of air-cooled condensing units. Janitrol Unit heaters, duct furnaces and schoolroom conditioners blanket the industrial heating market with a wide selection of models from 30,000 up to 1,750,000 Btu inputs.

You owe it to yourself to get the full story on Janitrol's full line . . . plus the fabulous Janitrol SELECT DEALER PLAN! WIRE COLLECT RIGHT AWAY!

FOR SOARING PROFITS IN THE SIXTIES, JOIN THE JANITROL SELECT DEALER GROUP! WIRE COLLECT FOR COMPLETE INFORMATION, ABSOLUTELY WITHOUT OBLIGATION...



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#### 1960 Phillips Report

about even with the 1959 figure of 74,000 units.

Approximately 330,900 automatic L. P. gas water heater units were sold in contrast to about 353,000 units in 1959-a little more than 6 per cent decrease. The 1960 unit sales volume represents about 12 per cent of all gas water heater sales as compared to 15 per cent in 1959. The competitive situation in this market was exceptionally keen during the year.

Warm-air L. P. gas furnace sales decreased 26 per cent. Sales in 1960 were about 74,000 units, compared to 100,000 units in 1959. Warm-air L. P. gas furnace sales were about 8 per cent of the total.

Vented recessed L. P. gas wall heaters were off to about 67,300 units in contrast to sales of about 80,000 units in 1959-a decline of nearly 16 per cent. The unit sales represented 18 per cent of total sales compared to 17 per cent in 1959.

Sales of direct heating units fell off 17 per cent to about 330,600 units, compared to the sale of 400,-000 units in 1959. This figure represents about 27 per cent of the



GEORGE R. BENZ Manager, Engineering Department



W. F. DEVOE Manager, L.P. Gas Sales, Sales Department



A. F. DYER **Technical Representative Engineering Department** 

total gas direct heating units-the same percentage as in 1959. About 24,100 LPG floor furnace units were sold, compared to 29,000 units sold in 1959-a 17 per cent decrease. This represents 28 per cent of all gas floor furnaces sold as compared to nearly 30 per cent in 1959. The proportion of L. P. gas dryers to total gas dryers sold increased about 4 per cent over 1959; however, total sales of all gas dryers fell short of the 486,000 units sold in 1959.

Gas-fired incinerator sales totaled 44,800 compared to 43,800 units in 1959—a gain of over 2 per cent. The 1960 L. P. gas incinerator sales volume represented a little more than 3 per cent of all gasfired incinerator sales.

Total sales of gas air condition-

ers, including dual heating and cooling units, are reported as 14,-000-up 40 per cent over 1959 sales. While only a small percentage of these were LPG fired, this figure should increase with increased promotional work in the future. It is reported that at least 10 of the larger L. P. gas distributors took advantage of the sales and service training programs offered by the leading air conditioner manufacturers.

Motor fuel. Sales continue to increase, but at a moderate pace, gaining 6 per cent over 1959. Emphasis is primarily on industrial trucks, farm tractors, irrigation engines, other stationary engines and local truck operations.

Weather is the dominant factor in the principal motor fuel markets.

#### MARKETED PRODUCTION OF LP-GAS

(In Millions of Gollans)

	тот	AL.	COMERCIAL (1)		MOTOR FUEL		MISCELLAMEOUS		GAS MANUFACTURING		CHEMICAL MANUFACTURING		RUBBER COMPONENTS	
YEAR	Volume	Yearly Increase	Volume	Yearly focresse	Valume	Yearly Increase	Volume	Yearly Increase	Valuma	Yearly	Valume	Yearly Increese	Valume	Yourly
1925	0.4	7.2 %												
930	18	81.4	12	100.0 %			2	46.7 %	4	60.0 %				
935	77	36.2	21	20.9			48	47.6	8	20.4				
940	313	40.2	134	53.1			124	32.8	20	31.4	35	29.0 %		
945	1,277	20.4	533	19.7			257	0.8	54	17.4	224	47.5	209	28.8
950	3,483	22.8	2,022	24.3	130 (2)		226	33.4	252	5.2	604	14.6	228	28.5
951	4,227	21.4	2,167	7.1	290	123.4 %	269	19.4	282	11.9	845	35.2	375	64.1
952	4,477	5.9	2,266	4.6	371	27.8	339	25.8	260	-7.8	871	3.1	371	-1.0
953	4,932	10.2	2,479	9.4	498	34.5	374	10.4	222	-14.4	967	11.1	391	5.3
954	5,126	3.9	2,627	6.0	547	9.8	402	7.3	192	-13.7	1,050	8.6	308	-21.2
955	6,123	19.5	2,801	6.6	652	19.1	556 (3)	38.5	214	11.4	1,493 (4)	43.2	406	32.6
1956	6,636	8.4	3,601	7.1	773	18.7	630	13.3	212	-0.7	1,601	7.2	418	2.9
957	6,939	4.6	3,067	2.2	885	4.1	685 (5)	8.7	231	8.9	1,732	8.2	418	0.0
1958	7,462	7.5	3,294	7.4	852	5.9	806	17.7	239	3.4	1,899 -	9.6	372	-11.1
1959	8,919	19.5	3,935	19.5	890	4.4	871	8.1	183	-23.4	2,526 (6)	33.0	514	36.2
1960	9,860	10.5	4,328	10.0	943	6.0	871	-	137	-25.0	3,031	20.0	550	7.4

demestic distributors but used for commercial or industrial purposes.
(2) For all years prior to 1950 the Motor Fuel valumes are included in the la

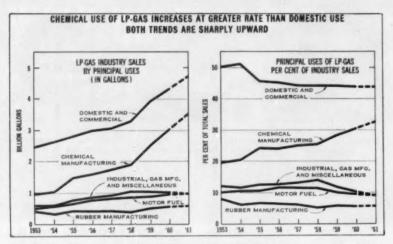
(a) yet my years prive to that me mean five transmiss are inclose Miscaliflances volumes.

(3) Includes make complete coverage of ratinary fuel.

(4) Includes make complete coverage of LPG mismus precond con (5) Includes volume cost in secondary reservory of petroloum.

(6) Includes make complete coverage of whome and/or only/one or more than 50% of either or both

Burson of Mines reports. Distribution for the years 1935 to 1959 inclusive, was obtained from the same source. All other volumes were estimated by the writers. The total sales volumed includes all LP-Gas (propose, butane, and propose-butane mistures) when sald os such. Until 1944 the sale of pentone when sold for any purpose other than mater fuel blanding was included. Stans than it has been cacluded, it does not include LP-Gases a blanded or otherwise used (e. g. by otherism) in the manufacture of generities, inter-an inter-services such as purchases of LP-Gos by one company from other compensate resold as L.P.-Coo have been eliminated in order to avoid duplication of pales figures.



Sales of LPG for chemical manufacturing totaled 3,031,000,000 gal., or 30.7 per cent of the market. This is a 2.4 per cent increase over 1959. In the domestic and commercial market 4,328,000,000 gal. were sold, or 43.9 per cent of the market.

#### 1960 Phillips Report

Heavy losses in the irrigation load occurred in several areas due to excessive moisture throughout the growing season. Gains were noted in the Northwest. Excessive moisture also had its effect on the farm tractor market. Though volume continues to increase, competitively priced diesel tractors offer a serious threat to this market.

For the fifth consecutive year, the fastest growing use for L. P. gas motor fuel is the industrial lift truck market.

The sale of motor fuel for highway use is handicapped by the nonuniformity of state special fuel tax laws and lack of available supplies of fuel on principal highways throughout the country. The volume sold through service stations continues to increase, but at a moderate rate.

The cargo truck refrigeration market has been adversely affected because of insufficient refueling outlets. There is evidence that diesel fuel refrigeration units are increasing in number primarily because fuel is more readily available.

The volume of LPG as a motor fuel is very difficult to pin down. It is often included with general agricultural or industrial uses in reports and surveys. Hence the statistics are often subject to question.

Industrial and miscellaneous. Use of L. P. gas in 1960 showed little change from 1959. Industrial usage declined somewhat due to the inroads of natural gas, which has replaced LPG in a number of industrial locations.

Next year may see an upswing in industrial usage, however, as many industries are considering the use of standby L. P. gas plants in order to take advantage of the relatively low rates offered by the utilities on interruptible natural gas service. Industrial usage was stabilized somewhat by the noticeable increase in LPG consumption by asphalt plants as the Federal highway program continued to move forward.

L. P. gas use as refinery fuel is included in the miscellaneous group. Consumption was about 120,000,000 gal. or 12 per cent less than 1959. Although there was an increase in refinery throughput of 4 to 5 per cent, less LPG was available for refinery fuel because recovery at refineries has been improved by about 10 per cent.

In secondary recovery of crude oil, the increase was significant because of existing miscible-phase recovery programs and large new projects. This gives strong indication of substantial future gains, as pilot operations in this type of secondary recovery have begun in several areas and show promise of developing into full scale projects.

An appreciable gain was reported in the use of LPG as a propellant in pressurized product containers such as paint, insecticides, deodorizers, and shaving creams.

Gas manufacturing. Widespread extension of natural gas lines and mild weather resulted in about a 25 per cent loss in LPG usage by gas utilities. Utility consumption should amount to about 137,000,000 gal. for the year.

The installation of large L. P. gas storage facilities for peak shaving purposes by natural gas utilities served to lessen the decline in this demand. There is an indication that large volume LPG storage by utilities for peak shaving will continue to increase with the extension of natural gas pipelines.

Chemical manufacture. The sale of light hydrocarbons as raw materials for the manufacture of chemicals and chemical intermediates increased 505,000,000 gal., or 20 per cent to a total of 3,031,000,000 gal. One-third of this volume consisted of ethane and ethylene, which were reported separately for the first time (as ethane) in the Bureau of Mines Mineral Market Report No. MMs 3125 "Sale of Liquefied Petroleum Gases and Ethane in 1959." (See October 1960 BUTANE-PROPANE News, page 65.) All ethane reported as sold for chemical feedstocks in 1959, occurred in only six states: Louisiana, West Virginia, Texas, Illinois, Kentucky and New Jersey.

In 1959 propane was preferred to butane as a chemical feedstock due to its lower cost. This preference accelerated in 1960 since refinery and synthetic rubber demands for the butanes and butylenes increased considerably as new alkylation units and rubber plants came on stream. The combined effect of these demands is that less butane is available to the L. P. gas market, except at premium prices. This trend is expected to continue through 1961. The use of ethane as a chemical feedstock increased more rapidly in 1960 than did the use of propane, and this, too, is expected to continue.

New petrochemical projects, planned or under way, total 120 and include additions to existing plants, synthetic rubber plants, and petrochemical plants that do not use ethane or LPG as feedstocks. Compared to 47 like projects under From the world's oldest propane tank manufactures





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#### PROPANE TANKS





All over the world by truck barge ship rail



You can't buy a better propane tank than those fabricated by Master Tank & Welding. No wonder, then, that Master tanks are in demand the world over. From the central locations in the United States, of Quincy, Illinois, and Dallas, Texas, Master is shipping tanks all over the world by truck, barge, ship and rail to those sections beyond the gas mains where propane is being used.

Master's experience spans 23 years in steel fabrication. This experience is your assurance of the ultimate in safety and performance built into every





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TANK TRUCKS

DOMESTIC FILLING STATIONS FARM CARTS REFINERY

# Save on your Fuel Oil and LP-Gas delivery costs with '61 FORD TRUCKS

### NEW 262-CU. IN. "BIG SIX" FOR GREATER TWO-TON PERFORMANCE AND ECONOMY

America's savingest two-ton petroleum delivery trucks now offer a big 262-cu. in. Six with the power of big displacement, the gas economy of 6-cylinder design, plus the durability of heavy-duty construction. This engine features a sturdy stress-relieved head and block, strong forged steel crankshaft, long-lasting, stellite-faced intake and exhaust valves and durable, pyramid-type connecting rods. Ford's proven 292 V-8 and 292 Heavy Duty V-8—the V-8's with "six-like" economy—are also available for your special power requirements.

And you save with other new durability features like the more rugged frame, stronger radiator with new lock-seam construction, improved cab and chassis electrical wiring, plus longer, easier-riding and more durable rear springs. In certified tests by leading independent automotive experts the Ford F-600's improved rear brakes showed an increase of 39% in brake lining life.

You save more . . . because you can carry more every trip! Functional chassis construction provides maximum strength with minimum weight for top payloads. Ford's tilt-cab design distributes more weight to the set-back front axle to increase payloads by as much as 1,000 pounds. And parallel ladder-type frame with 34-inch width—standard on all Ford models—allows you to install special tank bodies easily and at less cost.

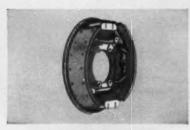






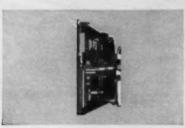
#### SAVE UP TO \$150 ON FRONT TIRES

In certified tests Ford front tires lasted up to twice as long. In 50,000 miles, savings can add up to \$150 on a pickup . . . more on two-tonners. And Ford's sturdy I-Beam front axle and leafspring suspension cut maintenance costs.



SAVE WITH 39% LONGER BRAKE LINING LIFE

The Ford F-600's improved rear brakes have a more positive retracting spring that completely disengages linings from drums for longer brake lining life. In certified tests rear brake linings lasted 39% longer.



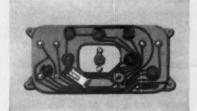
SAVE WITH HEAVY-DUTY 111/4-INCH CLUTCH

A big HD 111/4-inch clutch is now available with Ford's 292 and 292 HD V-8's for increased durability. Its large 140.8-square inch lining area dissipates heat faster for longer clutch life and greater dependability.



SAVE WITH POSITIVE CRANKCASE VENTILATION

Ford's Positive Crankcase Ventilation system cuts engine corrosion and oil contamination for greater engine durability and extended oil life. It's standard on the new 262-cu. in. "Big Six."



SAVE WITH PRINTED ELECTRICAL CIRCUITS

Ford's long-lived printed wiring circuit is standard on all Tilt Cab models. This system eliminates the "under dash" tangle of wires, minimizes shorts and provides for easy repair.



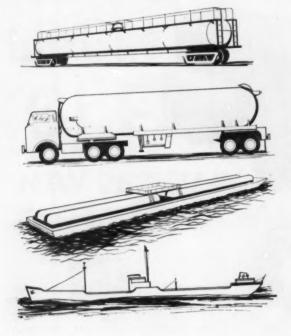
SAVE WITH TILT CAB ACCESSIBILITY

Ford C-Series cabs are quick and easy to tilt forward to expose the engine for inspection and service. Because you get such complete engine accessibility— maintenance and downtime can be cut.

#### FORD TRUCKS COST L

YOUR FORD DEALER'S "CERTIFIED ECONOMY BOOK" PROVES IT FOR SURE.





Four forms of L.P. gas transportation are presently in service and efficiency continues to improve.

way in 1958, this indicates that the increasing demand in 1959 and 1960 had reduced the margin between plant capacity and customer needs to the point that capacity expansion was necessary.

Polyethylene continued to expand more rapidly than ethylene oxide and ethyl alcohol. Demand resulted in the building of many new plants and the expansion of present plant capacity.

Propylene recovery and/or production facilities are being built to manufacture petrochemicals based on propylene, such as polypropylene, propylene tetramer, and others. Many petroleum companies entered this field during 1960, on their own or in alliance with chemical companies.

Rubber components. For this use, 550,000,000 gal. of normal butane and butylenes were sold. This is an increase of 7 per cent over the 1959 volume of 514,000,000 gal. It includes some ethylene feedstocks for producing styrene going into the rubber program. The increase here would have been double if more standard automobiles had been manufactured. As it was, compact cars were high in production and they require different

sizes and types of tires, and use less rubber. Export demand was up, augmenting the increase.

About one-half of the 196,000 long tons of added synthetic rubber capacity was used for the production of "natural synthetic rubbers," polybutadiene and polyisoprene types.

Supply. L. P. gas production kept pace with increased demand through expansion of production facilities (including new plants) and better recovery from existing plants. Thirty-nine new gasoline plants and nine plant expansions were completed to increase daily production capacity by 3,200,000 gal.

Some 1,300,000,000 cu ft of natural gas will be imported from Canada. This will affect the L. P. gas market on the West Coast since the bulk of the import will go there.

Because of the increased use of butane in chemical feedstocks and for gasoline blending, less butane will be available to the domestic market. This means there will be more conversions from butane to propane facilities particularly in the South and Southeast to serve the domestic market. Total underground storage capacity in mined and washed caverns for natural gas liquids is 2,282,000,000 gal., or an increase of 17 per cent over 1959. Because of the lack of usable salt formations, emphasis is on mined caverns near heavy marketing areas.

Total refrigerated storage capacity for LPG is over 11,000,000 gal. A substantial increase is expected due to advances in techniques, equipment, and materials, plus more promotional effort in 1961. These factors indicate that capacity will keep pace with production and demands.

Transportation. Lower costs, resulting from advances in LPG transportation, have been instrumental in sustaining industry growth.

Highway transports of over 10,000-gal. capacity, and 2500-gal.-and-larger bobtails are gaining wide acceptance. The industry is developing high speed equipment and loading and unloading techniques for these units and a loading rate of 500 gal. per minute became a reality in 1960.

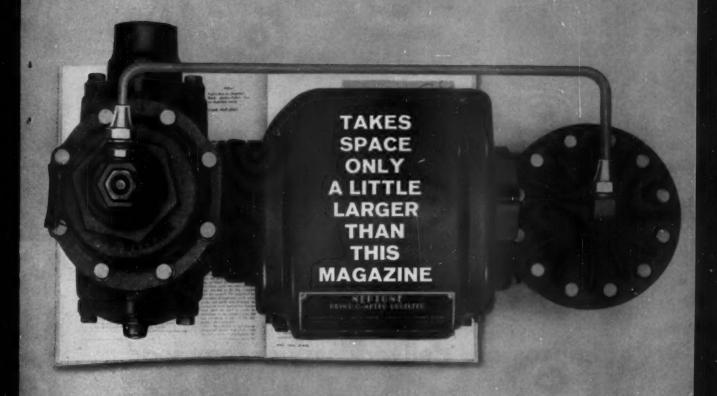
Interest continues in the use of positive displacement meters which give rapid, accurate measurement of product.

What the new "piggyback" method will mean to LPG transportation remains to be seen.

Growth was spurred in rail tank cars with the introduction of 30,000-gal. cars. Use of this method may be thwarted by the combination of increased water and pipeline movement, which will provide a natural impetus to truck transportation.

New pipelines, devoted solely to LPG, are the biggest development in transportation. One extends from Eunice, N. M., to Mc-Pherson, Kan. It is 2200 miles long and has a capacity of 50,000 bbl per day. Another line extends from Mont Belvieu, Texas, to Danville, Va. The line will extend a total of 1355 miles and have an initial daily capacity of 60,000 bbl.

Water transportation has seen a significant increase in 1960. Several new barge terminals were completed. Interest rose also in transporting refrigerated LPG by both barges and ocean-going tankers.



#### ... YET IT'S A COMPLETE LP-GAS METERING SYSTEM IN ONE SPACE-SAVING UNIT



The Neptune LP-gas truck meter is the only meter with all accessories built-in so compactly . . . a complete, accurate system that requires only *three* connections to install, takes space a little larger than this magazine.

In one assembly you get the most reliable meter built, vapor release, strainer, pressure relief valve, inlet check valve, differential valve, and vent line check valve. Plus a ticket-printer. All units are designed to work together as one integrated and compact package. Always easy on your pumps.

Most important, all elements are designed, built, assembled, and calibrated as one unit by Neptune.

Add to this Neptune's fine reputation for sustained accuracy and low maintenance, and you have the LP-gas man's most sought-after business friend.

All sizes. Backed by nation-wide network of Neptune-operated service centers. Your Neptune jobber or tank truck builder will be glad to supply details.

#### NEPTUNE METER COMPANY

47-25 34th St., Long Island City 1, N. Y. Branches and Jobbers in All Principal Cities In Canada: Neptune Meters, Ltd., Toronto, Ontario

LIQUID METER DIVISION



Small-scale piggybacking was the improvised delivery solution that may lead to hundreds of propane-burning switch heaters. Note the wheel chocks and tie-down straps securing the truck.

## Improvised delivery service may lead to hundreds of sales



Here is a closeup of one of the two 18-ft-long switch heaters that do the job of several men maintaining a 24-hr vigil at Cobb Junction, Neb.

RAILROADS FREQUENTLY HAVE frozen switch problems, but last winter the Chicago, Burlington and Quincy Railroad—"the Burlington Route"—had a particularly acute frozen switch situation. A vital switch at Cobb Junction, Neb., often froze solid in spite of constant attention by a man with a kerosene hand heater. During heavy snow and ice conditions, several men were required to maintain a 24-hr vigil

Last winter, the railroad installed an 18-ft-long propane-burning double heater with remote controls in Lincoln, 12 miles away.

The next problem was to fill the 500-gal. tank, which had also been installed. There are no roads lead-to Cobb Junction and the fields were impassably soft from melting snow.

Ralph Carroll, manager of the Lincoln Skelgas store, heard of the railroad's difficulties and went into action. He convinced the road's local superintendent that his company could handle both the immediate and the long-range supply problems.

Small-scale piggy-backing was the answer. A Skelgas bulk truck was loaded on a flat car and taken to Cobb Junction on a local freight. The tank was filled, the truck was unloaded at the next town, and it returned to Lincoln under its own power.

Satisfied with the arrangement, the railroad soon asked for quotations on 1000-gal. tanks for 16 additional switch heater locations. Approval of that transaction is still being held up by the railroad, which wants a full report from its efficiency engineer on the amount of saving over the manual operation. However, Carroll says:

"It is the opinion of the Lincoln office of the Burlington railroad that in the very near future there will be hundreds of these switch heaters in operation."

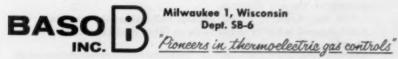
# BASOTRON wered control syste

Three essential components that make possible a completely integrated BASOTRON flame-powered control system are SEMIMETAL POWER-COUPLE... ENCAPSULATED CONTACTS, inside bellows, assuring accurate thermostatic temperature control . . . DIRECT-LIFT BASOTRON VALVE.

BASOTRON flame-powered control systems are available for a wide variety of gas heating appliances.

Get the complete story at the International Heating & Air-Conditioning Exposition, Chicago, February 13-16

BOOTH 851



Milwaukee 1, Wisconsin

## A 10-point program to capture the Discretionary Dollar

"A critical decade"

"IN THE LATE 1950's, we began hearing wonderful forecasts of a tremendous upsurge in business during the decade of the 1960's. Such phrases as "The Golden Sixties," "The Soaring Sixties," "The Booming Sixties," appeared so often in economic forecasts that an unrealistic picture formed in our minds. Jan. 1, 1960, began to assume the proportions of a "golden faucet," which would somehow be turned on magically, bathing industry in a golden flow of sales and profits.



E. S. Kleinmann Dearborn Stove Co.

"To date the flow has been only a trickle.

"I think we should rename the decade "The Selling Sixties," and recognize that sales and profits will not come automatically. Instead, this is going to be a very tough period. The battle for the discretionary dollar will be the most intense we have ever seen. Competition will be keener than at any time in history.

"I think that more than ever before, skill and diligence in advertising, public relations, and sales promotional endeavors will spell out the difference between success and failure in the decade ahead.

"In my opinion, this is certainly going to be true in the coming intensified struggle between gas and electricity. This struggle is going to become a classic in the annals of American industry. The gas industry need not lose this battle. It has a quality product to sell, with many advantages. If we, in the gas industry, can pull together and do the kind of aggressive, affirmative merchandising job that we should do, we will emerge bigger and stronger and more profitable than ever before. I think we need to talk about our problem and from such talk develop a coordinated program of action which will accomplish the end objective.

"By way of getting the ball rolling, I offer these thoughts on what the gas industry needs to do in the period immediately ahead:

A BPN Exclusive

- Develop a vibrant slogan that all elements of the gas industry, natural and L. P. gas alike, can and will use.
- Vigorously promote the meaning, value, and stature of the AGA Blue Star Seal of Approval.
- 3. Set up a "Truth Bureau" to counteract the electric industry's claims. We have all noted the frequency with which the industry promotes its products by use of "out-of-context" sales arguments. The purpose of the Truth Bureau would be to subject such out-of-context claims to immediate critical review and analysis, and to issue Truth Bulletins accordingly. This bureau would provide data for speakers, writers, manufacturers, dealers, distributors, and trade and consumer journals.
- 4. Engage in dramatic industry promotions in all areas of the country—gas rallies, so to speak. I think such gathering places are Soldiers' Field in Chicago, or in the winter season, the International Amphitheater; the Los Angeles Coliseum; and the Cotton Bowl in Dallas, should be the scene of giant gas industry entertainments and displays dramatizing the tremendous services available in the gas industry, and educating the American public to the fact that this is a growing, progressive industry.
- Develop a code of ethics for gas personnel in all phases of the industry. Promote its adoption by all who work within the industry and publicize it widely.
- 6. Carry the fight to the electric industry by capitalizing on its weaknesses, and on the strengths of the gas industry. In many ways, we are infinitely better than they. Let's not be coy about this . . . let's tell the world. We are beginning to do this in heating ads.
- 7. Organize gas councils in each state made up of representatives of all strata of the industry—dealers, distributors, field salesmen, sales managers, production, financial and engineering personnel. These councils would meet bimonthly (or on special call of the chairman) to discuss industry matters in each state. A complete report of proceedings of each meeting to be submitted to a national headquarters setting forth conclusions and recommendations.
- Carry on strong and constant sales training programs. Strength at the point of sale will overcome the advantage the electric industry enjoys in advertising and promotion.
- 9. Promote a coordination of effort between natural and L. P. gas elements of the industry. The

1960 census figures have already indicated a drifting of population from the large cities to the suburban areas surrounding those cities. I think it is here that the battle between gas and electricity will be most ardently engaged. Natural gas mains cannot be extended to these areas rapidly enough to offset the immediate availability of electric service. But, in these areas, L. P. gas service can be immediately available. This fact makes the LPG dealer vitally important to the natural gas utility company. By his marketing actions the L. P. gas dealer actually serves as front man for the natural gas utility. If he sells these new suburban homes L. P. gas service and L. P. gas appliances, he holds the gas market for the gas utility company. If he doesn't sell them, electric service and electric appliances are installed. If enough of this goes on the gas utility company might as well forget about extending its lines. This, in my opinion, points up the vital importance of a close coordination between the natural and L. P. gas industries.

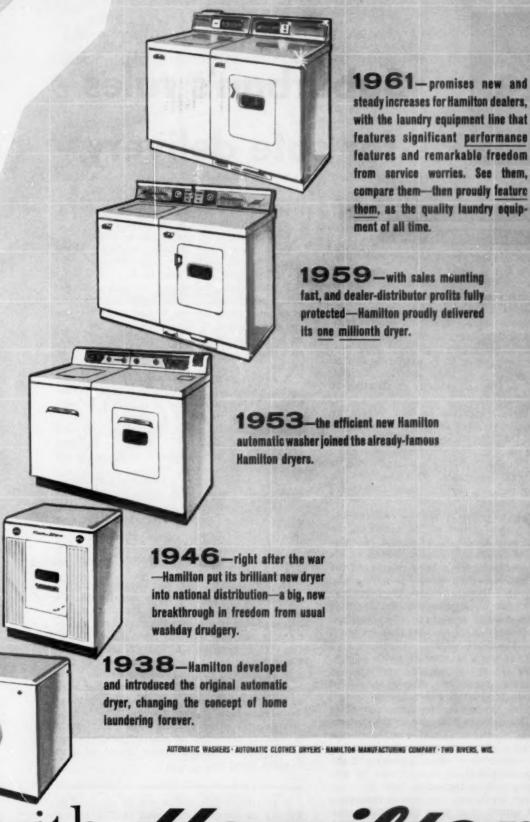
10. Carefully review the marketing philosophy of the gas industry. In the recent past the industry has hitched its promotional wagon to the gas range star. In spite of this, the electric range has made headway. In 1950, the ratio of sales favored gas 1.7 to 1. In 1959, it was down to 1.3 to 1. In 1950, the ratio of ranges in use favored gas 3.5 to 1. In 1959, it had slipped to 2.2 to 1. This would indicate that even more needs to be done. We must apply this lesson to gas heating. Sixty-five per cent of all domestic gas load, natural and LPG, is for heating purposes. If the electric industry succeeds in its heating promotion, this important gas usage will be drastically curtailed.

I believe that in the gas industry we have an outstanding basic product . . . we have an outstanding and constantly improving galaxy of appliances and equipment for the application of that product. We have a wealth of outstanding personnel. In short, there is no reason why we should not continue to grow and prosper. No basic reason, that is. There is, however, urgent need for the gas industry to get together in a way heretofore not achieved. This is as a whole instead of in several segments. Such a joining of forces in a concerted, vibrant program will win the knock-down, drag-out "Battle of the '60's," which is currently being engaged. To fail to get together would be tantamount to conceding victory to the electric industry even before the battle is fully joined.

A reprint of this article can be obtained by writing on company letterhead to The Editor, BUTANE-PRO-PANE News, 198 S. Alvarado St., Los Angeles 57, Cal.



you'll move up



with **Hamilton** in '61



## Suburban's rules for safe delivery

#### DRIVER QUALIFICATIONS

#### AND TRAINING

OPERATING A TANK TRUCK is more than "driving" per se and is equal to, if not greater in importance than, any other service job. It takes an intelligent, mentally stable, and experienced man to handle a delivery truck properly. We therefore select our delivery truck drivers from our older and more experienced employees—men who have had experience making installations, know the properties of L. P. gas, know how to handle it and how to make safe installations, and know the size and capacity of all types of containers.

All of these things can be best learned by experience. Deliverymen should have station experience so that they know how to fill their truck tanks properly.

Physical fitness, including adequate vision, is of paramount importance. This can only be assured by periodic physical exams—these are an ICC requirement.

A man who measures up to these requirements with only a short period of instruction on the tank itself, can handle it safely and will also know how to handle emergencies because of his familiarity with the truck, the product, and the customer installations to which delivery is made.

We ask our drivers to observe the following:

1. Use chock block whenever the truck is parked, for delivery or for any other purpose. We had a driver tell us one time that the truck rolled over the chock block.

2. Keep the truck in view as much as possible. With the bypass working properly, the pump operates regardless of whether liquid is going into the customer's equipment or not. This enables the driver to open and close valves on his delivery hose and at the customer's tank as he wishes. Thus, even though the truck is out of sight, the driver knows generally that everything is okay. However, if the driver can see the truck at all times, he can prevent people from tampering with it.

3. Inspect all hoses and other equipment daily and report it if they are not in good shape. Since the delivery hose is in constant use, he is always aware of its condition, but hoses used in the suction or discharge piping

to provide flexibility are not always so obvious, so regular inspection is essential.

4. Concentrate on the job at all times.

5. Know how to handle overfills. These should happen infrequently, but when they do the driver must know what to do.

6. Religiously follow the walk-around routine. Our trucks go into many narrow and oftentimes blind driveways and there may be children around. If he walks around the truck he is sure no hose is connected, that no wagons, bikes or children have moved in since he parked.

7. Always complete the delivery and disconnect the hose before he tries to talk to the customer. This can be done courteously by saying, "I'll be with you in a minute."

8. Take special precautions at schools and places where the public gathers. Delivery trucks should not be parked in groups along public highways, or at diners.

9. In maneuvering in a customer's driveway, bear in mind the height of the vehicle so as not to pull down grape arbors, electric or telephone wires, or damage overhanging parts of the house

10. In case of any release of gas, know what steps to take to minimize chance for ignition and injury.

11. Report hazardous conditions on the truck or in the field at a customer's installation. On the first delivery to a new installation, the driver checks to see that the customer's equipment is properly located; later, he checks to see that it remains so. (Sometimes the customer builds an addition to his home so that a good location can become a poor one.) He must report other troublesome conditions, such as equipment located too close to openings downgrade from it, even though there is compliance with other spacing rules. Equipment in narrow areaways or similar locations can cause trouble and our driver should be alert to point these out.

A reprint of this article can be obtained by writing on company letterhead to The Editor, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Cal.

"There are four main divisions of the safety problem," says W. D. Cook.\* "Driver qualification and training, truck design, periodic checks, and station procedures."

12. Know what practice to follow in case of emergency repair to the truck. If the tank contains liquid, servicing should be done outside. If it is necessary to work inside, liquid should be removed, the pressure blown down to 25 psi or less, and all valves capped or plugged. (NFPA standards covering this point are now being worked out.)

13. Know how to handle customer situations where gas flow to appliances has been interrupted, such as in handling an out-of-gas call—including how and when to make a leak test.

#### TRUCK DESIGN

The truck should be built to conform with ICC requirements, regardless of whether there is any such legal requirement. In addition, the following points, some of which are also covered or partially covered by ICC, are of importance:

1. There should be a minimum of streamlining or false work on the truck. The oldtimer of 1930, while it is out of date, did have certain safety and efficiency advantages which are equally valuable today. The piping, regulator, and pump were in plain view and accessible. Piping, pump, meter, and tank fittings should be amply protected against collision, road damage, and mischievous tampering, but otherwise should be accessible. So-called "streamlining" has been known to hide fires. It also makes them difficult to handle and makes leaks less obvious and more difficult to locate. If it is not needed to protect container and fittings against collision damage and road dirt, it merely adds weight and cuts efficiency.

2. Tank outlets should be kept to a minimum and properly located. Many of our trucks have only one outlet in the underside of the tank, that being the liquid outlet. The balance are in the manhead cover (all but a small percentage of our tank trucks have manheads). Some of our trucks still have liquid outlets in the rear, with a liquid eduction pipe. Wherever located, all outlets should be adequately protected against collision or overturn damage. The rear relief valve mounting was used on the 1930-model truck tank. It has proved to be an acceptable location. Wherever located, it should be well protected against physical damage and corrosion from rain and condensation. Loose fitting rain caps, adequately kept in place under normal conditions are essential.

3. The container must be adequately secured to the chassis so that it cannot become detached even in a collision. (The holddown method we are currently using has survived unintentional field tests—in fact, in most cases the container has held the chassis together.)

4. All tank openings (except the relief valve) are equipped with either an excess flow valve, back flow check valve, or a 54 orifice. All main liquid and vapor lines also have a manual shutoff located as close to the container as practicable.

5. Two fire extinguishers are carried, one on each side to increase the chances of having one available. Usually a small extinguisher is also carried in the cab.

#### PERIODIC CHECKS

- 1. Test relief valves and excess flow valves periodically (latter at least yearly, oftener on new tanks because of scale problems).
- 2. Check strainers monthly to make sure lines are not choked with scale.
- 3. Provide tapered wood plugs for use in emergencies. A broken valve or broken pipe can be effectively closed with such a plug.
- 4. Make supervisory inspection of tank trucks monthly for painting, readiness of fire extinguishers, hose condition, etc.
- 5. Properly requalify truck tanks as required by ICC (see also driver fitness).

#### STATION DESIGN AND PROCEDURE

1. Isolate the truck charging spot from plant buildings or storage tanks.

2. Insist that the driver leave truck keys at the rear of the truck rather than in the cab. This requires him to go to the rear of the truck, where he can make sure no filling hose is connected, when he gets the keys to start off. (There have been electrical systems devised for this purpose but we have found the key system to be the most effective.)

3. After filling (such as by night attendant), park trucks away from charging spot, and if possible, isolate them from each other by a truck length or more.

4. Do not park trucks near buildings where there is a means of ignition, or near flammable materials which may expose the truck to fire.

5. Where gas shipments are received by transport, make sure that, in order to make room, tank trucks are not so placed as to violate any of the above rules.

These rules are adapted from a talk presented before the meeting of the National Fire Protection Association in Columbus, Ohlo on Nov. 15. Mr. Cook is vice president and controller of the Suburban Propane Gas Corp., Whippany, N. J.

#### Is electric heating a threat NOW?





Contacting dealers on a one-per-state basis, BPN's Dealer Opinion Survey on electric heating has now heard from exactly half of the states. The 18 marketers replying since the last issue went to press make up this month's Dealer Opinion Panel:

California-Harry Horn, Horn Inc., Anaheim.

Colorado-Ernie Knutzen, Golden Gas Co., Golden.

Delaware-Stanley H. Keen, Keen Compressed Gas Co. Inc., Wilming-

Florida-K. H. Koach, Green's Fuel Inc., Sarasota.

Kansas-Clyde Cheatum, Coleman Gas Service Co. Inc., Wichita.

Maine-M. N. Allen, Allen's Bottled Gas Service, Presque Isle.

Maryland-L. H. Parlett Jr., The Arundel Gas Co., Edgewater.

Massachusetts-Robert B. Sahagen, Robert B. Sahagen & Co. Inc., Rochdale.

Montana-Bert J. Miller, Brown's Propane & Appliances, Hardin.

Nebraska-N. L. Hahn, American Propane Gas Co., Omaha.

New Jersey-John J. Long, Delaware Valley Propane Co., Merchantville.

New Mexico-T. B. Watkins, Anderson & Watkins, Roswell.

New Hampshire-J. L. Fietze, Gas Service Inc., Nashua.

North Carolina-Clem A. Childers, Sungas, Raleigh.

Ohio-Curt Mosher, Bayless L-P Gas Inc., Damascus.

Oregon-Dick Dodd, Dick Dodd Propane Gas Co., Coos Bay.

South Dakota-George F. Anderson, Anderson Gas & Appliance Co., Presho.

Wyoming-Ted Sheehan, Arrow Gas Service, Upton.

What is the status of electric heat in your area right now?

Horn - Electric heating is a mounting threat in this

area, more so in central heating (heat-pumps).

THE

DEALER

SPEAKS

Knutzen-I know of no electric heating installations in our area and do not think space heating will be a threat. However, advertising to contractors may make central electric heat a threat in new homes.

Keen-There is so little electric heating in our territory that I know nothing about it.

Koach-It's not a threat as yet. Electric rates are too high in most areas where we operate. Electric heating down our way is for the most part in space heaters or supplementary heat pumps.

Cheatum-Electric heat is just getting started in our area and is likely to grow. Several central heating units have been installed. The local electric company seems to be most interested in central heating, since it provides the big load.

Allen-Due to our cold winters and high electric rates, it is not a threat as yet. The only change

#### Tremendous counterflow...



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Corporation

will be if proposed power projects materialize.

Parlett-We compete against a powerful combination utility, the Baltimore Gas & Electric Co. It has pushed gas heat well in its piped areas and cannot talk against it the way an independent electric utility could. I feel that this has held back the promotion of electric heat in our area. However, I also feel that the company will promote electric heat to a greater extent, since it has the same load-balancing problem of independent electric utilities. Only about six homes in our service area have installed central electric heat, so the main volume of sales has been in electric space heaters.

Sahagen — Some promotion is being done by the local electric utility, resulting in few sales, as far as we know. Undoubtedly the threat will increase in the years to come. Local utility advertising presently centers on electric central heating.

Miller—There's not much electric heating in this area now. But electric central heating will be a threat as soon as a new dam is completed.

Hahn—Electric heating is becoming a threat. And it's more of a threat in central heating than in space heating. More new homes in our area are being constructed with electric heating, especially in the past two or three months.

Long—We have no electric heating in our territory.

Watkins—Yes, it's a threat in our area right now. We hear a great deal about the use of electric heaters—especially in rural areas where the REA has a flat rate minimum. There, the consumers feel they must use as much electricity as possible.

Fietze — The local electric industry is now beginning to move toward advertising electric heating. There are only one or two installations to date.

Childers—Electric heat in our area is mostly in the form of dual purpose units (heat pumps) in new houses and in remodeled dwellings. There is very little other than this.

Mosher—There are a few electric heating installations in our immediate area and the electric company has personnel working on it.

Dodd—It certainly is a threat now. More installations are going in each day. Electric heat will take most of the new home construction and we look for it to continue to grow in all fields. This area has very low power rates, less than one-half of the national average rate.

Andersen — It is being advertised and promoted but has hit its peak. Only one home in this county installed electric heat this year.

Sheehan—There is no threat of electric heating in this area at this time. I don't know of a single electric unit.

What is the record of electric heat in your area?

Horn—There have been no flops in the initial stages, that we know of. But there is some discontent with the upkeep charges, the necessity to increase insulation, etc.

Cheatum—In our area, it costs a lot more to heat with electricity than with L. P. gas—even after the electric company has insisted that the customer completely insulate his house. If the home was insulated in the same manner and LPG was used, there would be a considerable saving over the present cost of heating an incompletely insulated home with LPG. Once the change to electric heat is made, it is very hard to change back: the customer feels he has so much invested that he simply has to

Parlett—While the number has been small, we have taken over a few space heating jobs from electric units because of their high cost of operation. We have not lost a single one to electricity so far.

Miller — Flops have outnumbered success two-to-one. Three customers came back to gas, while one stayed with electricity, but is unhappy.

Hahn—In the last two years, eight electrically heated homes were constructed in our area. Two have already converted to gas and two more have indicated they want to convert to gas, but the

conversion is so expensive that they will have to wait until they can afford it. The remaining four report very high heating costs.

Childers—The electric company admits several failures.

Mosher—I know of at least two heating installations that were changed to gas, one after it was in use and one before the owner ever moved in.

Dodd—Most reports on electric heating are good. Of course, it has had some flops; but there have been many successes. I have heard of only a few who switched back to gas.

Andersen—No electric heating units have been removed but most all electric heating customers are unhappy with their bills. Interest is fading fast.

What do you think about the future of electric heat?

Horn — Considering the impact of electric heat advertising along the prestige angle, electric heat will continue to be a threat to gas heat in this area, especially if they bring the price down even a little.

Knutzen—Electric heating is a threat nationally. I think it will increase through national advertising by the large electric appliance concerns.

Koach — Electric central heating will not come down our way in the foreseeable future. Nationally, it may come in areas where the rates are low—after the development of more electric heating equipment.

Cheatum —When electric rates are lower—and they will be sometime—we can count on competition in the heating field. The electric companies have got to do something with their surplus power. I think electric heating will gradually increase, but I do not think that an aggressive LPG dealer need worry too much.

Allen—I don't know about nationally, but locally electric heating should come in about 20 years. It can be the foot-in-the-door of the all-electric home but a lot of changes will have to come first.

Parlett — It will depend upon the cost of fuel and the degree of development of the heat pump. I believe resistance-type heating has a limited potential.

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Propane and its relatives, the wonder-working Liquified Petroleum Gases, have been working a quiet revolution in America's heartland. By providing an economical, clean-burning fuel in transportable form, LPG has brought convenience and modernization to millions of farms, homes and industries. And now Mid-America Pipeline Company adds the one virtue which had been lacking: a dependable supply line, with an initial pumping capacity of 50,000 barrels of LPG a day (and a design capacity of over 85,000 barrels a day) in any kind of weather!

If you want to give your customers better service (and perhaps even extend your markets,) it will pay you to investigate this brand new avenue of LPG transportation. We will be happy to provide you with detailed information on your shipments. Just get in touch with us!





#### MID-AMERICA

PIPELINE COMPANY

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#### Management Portfolio

Sahagen — Nothing ever happens too suddenly in New England and electric heating is no exception. We do not feel it will snowball—as electric cooking did—because of the lack of available power lines and other facilities necessary to carry this tremendous load.

Miller—The future of electric heat is good nationally but only fair in my area. I don't think it will snowball the way electric cooking did, but it could be the foot-in-the-door of the all-electric home.

Hahn — Electric heating can very easily snowball the way electric cooking did. The local electric company is subsidizing electric heat at the rate of one-half cent per kilowatt-hour. It is also putting on a vigorous promotion campaign which is taking effect, especially with building contractors.

Watkins—In this area, we do not feel electric heating will hurt us too badly.

Fietze—We are sure it is going to make inroads.

Childers—Electric heating is on the way. In our area, it is being pushed by housing development builders who want to offer "the latest" to sell houses. Very few people in our area use architects or build their own homes, so it is difficult to talk to the home purchaser until it is too late. With the current trend of home building, I think electric heat will go very strongly unless something can be done to reach the average contractor or developer.

Dodd—I expect electric heating to grow nationally, particularly in the areas where low cost power is available. We really look for it to continue to grow in this area, but do not think it will go over as big as electric cooking. The all-electric home is being advertised quite heavily, in this area, so it will make more inroads.

Andersen—We are in the 8000degree day area, which is too cold for electric heat to be competitive. It will not be a problem at the present rate of .0175 per kw.

#### For a 50-cent dollar, profit-sharing can improve employee relations

This article could well be called a continuation of the one on "Postponed Compensation" that ap-



peared here last May. Besides providing substantial tax benefits to officers, executives and other high salaried employees, a profit-sharing plan also furnishes other proven business advantages.

To BE TAX-EXEMPT, this plan must be Treasury-approved and all employees must be members and beneficiaries. It could be an efficient and economical supplement to an existing pension plan.

Unlike a pension plan, it need not impose fixed obligations upon an employer. Instead, the trust agreement may bind the company or other employer to contribute a percentage of profits which usually vary from year to year. In a no-profit year, no contribution would be required.

Non-tax advantages. A profit sharing plan promotes better employee relations, tends to attract the best employees, lessens personnel turnovers, encourages efficiency, and stimulates initiative plus greater productivity.

Tax advantages. An employer's contributions to the trustee are deductible (for income tax purposes) from profits before taxes. Thus, if you or your corporation is in the 50 per cent bracket, such deposit will cost you only half of the sum so contributed by virtue of the taxes saved. An annual deposit of \$10,000, therefore, would actually cost but \$5000.

Trust income and trust gains are tax-exempt. Until his share of the benefits is actually received or made available to him, each officer or other employee is free of income tax liability to his employer's contributions, and for trust fund earnings. They are then accorded the more favorable long-term capital gains treatment, provided such distribution is all made in one tax year (1) by reason of death or separation from the service, or (2) because of such employee's death after separation.

Maximum advantages of any such plan are dependent upon the selection of a proper plan for your own business organization, a qualified trustee skilled in investments and genuinely interested, and periodic reports on benefits and progress to each member.

Primary purpose. Profit-sharing plans are intended ostensibly and primarily to provide benefits that will augment a retired employee's other income. However, they may include other fringe benefits.

Operation. As pointed out, the amount of an employer's deposit is usually governed by a percentage-of-profits formula. Such percentage may range from 2 per cent to 50 per cent of profits. However, the employer's income tax reductions of such deposits are limited to 15 per cent of the year's payroll. Should a combined pension-and-profit-sharing plan be established, you become entitled to a top deduction of 25 per cent of the payroll.

Instead of such percentage formula, the amount of an annual contribution can be formally determined each year by an employer. This is called the "open formula."

Where the trust agreement so provides, the employer may amend or discontinue the plan but *not* to the extent of revesting any of the funds in himself (or itself) or of reducing or otherwise affecting an employee's credits.

The plan must also provide a formula for periodically allocating the trust estate, including deposits, gains and earnings, to the separate accounts of the employees. This allocation is usually based upon the ratio that each member's annual wage or salary bears to the total annual payroll for the same year.

Eligibility for membership may be fixed by a prior period of employment. Many plans require less than six months.

You may provide for employee contributions to the fund to be credited to the contributor's account. These are not deductible by him for tax purposes.

Saves appliance manufacturers money... because complete control is in one basic unit. New MIDGITROL is the combination valve designed for a variety of small, gas-fired appliances and equipment—room heaters, furnaces, wall heaters, floor furnaces, boilers and clothes dryers. Compact and small, it fits perfectly into the tightest space as a complete manifold unit. MIDGITROL is easy to wire, easy to install, dependable in operation. Designed to shave production costs... add sales appeal. Check out the mighty little MIDGITROL today... available in three basic models—plus a choice of three inlet and three outlet tappings in all models. There's a nearby General Controls field representative ready to tell you all about this exciting innovation for the gas appliance industry. You'll find him in the yellow pages of your local telephone directory.



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Retirement age is normally fixed at 65, but may be earlier or later, and may vary within a particular plan with the consent of the employer. Distributions may be in a lump sum, or a fixed, periodic income for 10 to 20 years after normal retirement.

Employee profit possibilities. Ordinarily plans provide for a partial "vesting" and a partial forfeiture of the share credited to an employee's account, based on the length of employment. For example: Each completed year of service can entitle the beneficiary to a distribution of 10 per cent of the amount in his account. If, on retirement, he has served 10 years or more, he would then be entitled to 100 per cent. Should he retire at the end of six years, he would receive only 60 per cent and the remaining 40 per cent would be forfeited. The latter per cent, then, is usually reallocated and added to the accounts of the remaining employees. Thus, fractional forfeitures frequently increase the retirement benefits of long-service employees.

A member should have the right to name a beneficiary (or his probate estate) to receive the death benefits provided.

The trustee should be a longestablished and highly reputable bank or trust company. It should be given power to invest the funds in high-grade and comparatively safe securities. Its accounting duties should be spelled out in detail.

Profit sharing plans do not grant an employee the right or power to prevent his discharge.

Though the trust must be irrevocable, the employer can be given the right to amend it, but not so as to revest any part of the trust in himself or itself. Neither can an employer reduce the amount which, under the plan, is or should be credited to any participant. This is true whether such amount is "vested" or not "vested."

While employed, a member may not assign his benefits in whole or in part.

The trustee's compensation and expenses may be paid either by the employer or out of the fund held in trust.



#### **ASSOCIATIONS**

#### Two 1961 "giveaways" planned despite cut in council budget

A GENERAL BELT-TIGHTENING was ordered for 1961 when the National L.P. Gas Council held its final board meeting of the year in Phoenix, Nov. 28-29.

In a sober, though not pessimistic, report to the some 55 delegates in attendance, President Frank T. Carpenter (United Petroieum Gas) announced that for the first time in six years, the council had failed to grow. Receipts in 1960 fell short of budget requirements, forcing the group to dip into surplus. To prevent a recurrence, the executive committee cut some \$70,000 out of budget requests for the coming year. Instead of a \$575,000 pie, the various activities of the council will have but \$505,000 to divide up.

Underscoring President Carpenter's remarks, membership Chairman Dick Muellerleile (National Propane) reported that the number of participants had dropped to 1202—20 less than the all-time high.

At the close of the meeting, the directors unanimously elected a slate of officers headed by Don O'Meara, vice president of Pyrofax, as new president; A. B. Ritzenthaler, the Tappan Co., chairman of the executive committee; and James F. Donnelly Sr., A. O. Smith Corp., secretary-treasurer. In committee reports, the programs which this new executive team will have to work with were previewed. Some of the highlights:

Advertising. Chairman Don Barton (Skelgas) introduced the new advertising a gency. Campbell-Mithum, whose representative, Phil Lavin, set forth the promotion proposals.

In 1961, there will be two promotional events, both "L.P. Gas Giveaways." The first, set for April, will be for the farm audience. Winners, to be selected from names of consumers submitting entries obtainable at dealer-members or from participating equipment suppliers, will be given valuable farm equipment.

The second, scheduled for September and October, will offer a full house of modern LPG appli-

ances. Winners will register in much the same way as for the April giveaway, but this one is intended to attract housewives.

In addition, C-M plans to stimulate tie-in advertising from suppliers. By placing ads adjacent to council insertions, and repeating the main heading of the council's own layout ("Take a New Look at L.P. Gas"), they would thereby increase the impact of both, in the eyes of the agency.

Incidentally, it was pointed out that Campbell-Mithum had been able to increase ad space for the dairy association from \$176,000 to \$4 million, between 1943 and 1960, by using such methods.

Advertising will take \$250,000 of the half-million budget. Insertions are scheduled for Successful Farming, Farm & Ranch, Farm Journal, and Better Homes & Gardens. Some radio time will also be contracted, and there is a small budget for material's handling and home economics magazines.

Dealer Sales Aids. A. E. Moore, Dri-Gas, distributed copies of the new "L.P. Gas on The Farm" booklet, which will be distributed in 1961. He also showed a promotional planner book, and told about a new bill stuffer series.

Public Relations. Phil Harper (Harper Wyman) conducted a premiere of a new consumer movie titled "Living Pleasure." He explained that contracts will be made with 200 TV stations to show short segments of the film in the Modern TV Digest series. The film will also be available to dealers, and on the "Digest" series, dealers will be able to buy tie-in time.

In summing up the past year's activities, Carpenter reported that slightly more entries had been received in the Sweepstakes than the year before, but that a great many more had been registered through retail member-dealer stores than in 1959. In looking to the future, he remarked that a new activity is needed — market research.

As a sidelight of the program, Managing Director George Schulte put through a long distance tele-



#### MAGIC CHEF

The board of directors of Dixie Products, Inc., recently voted to consolidate all divisions under the corporate name — MAGIC CHEF, INC.

The decision to consolidate operations follows careful study of market research substantiating the outstanding brand identity of Magic Chef as well as consideration of the advantages of single-purpose marketing and manufacturing efforts.

Magic Chef, Inc., emerges as one of the largest range manufacturers in the nation.

Under the direction of the dynamic leadership that sparked Dixie's phenomenal rise in the industry, the new Magic Chef corporation will enjoy the power of the combined marketing and management know-how that so ably led the separate divisions. Now, all corporate efforts will be devoted to strengthening the competitive position of Magic Chef.

As a start, manufacturing facilities have been expanded to an output of 1700 ranges daily.

Soon you will see further tangible evidence of the new spirit and new power that is Magic Chef, Inc.

You will see a totally new line of Magic Chef appliances—ranges and freezers. You will have a wider, complete Magic Chef Gas Line, from competitive starting numbers to high-end models.

You will have intensive merchandising support—frequent, imaginative national advertising co-ordinated with planned, varied retail promotions tailored to your merchandising requirements.

And there is more to come. Research and development facilities will be greatly expanded, resulting in a constant improvement of Magic Chef... in the continual development of new features and new products. There will be a constant search for new answers to your merchandising problems, for new approaches to advertising on both the national and local levels.

Already, your dealership is more important ... your competitive position is stronger. And as Magic Chef, Inc., builds, expands and creates, your future grows brighter with ours.

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City & State .....

phone call to Orlando, Fla., to notify the Sweepstakes winners of their good fortune. President Carpenter made the presentation. The call was amplified so delegates could hear the conversation.

Robert Leitch of Bottled Gas Corp. of Virginia appeared on a local television show in the late afternoon to extoll the virtues of LPG cookery using infra-red burners.

#### Plans, layout completed on TBDA's LPG magazine

Since the board of directors of the Texas Butane Dealers Association adopted the idea of publishing a monthly magazine telling the L. P. gas story, the idea has become a reality.

"Modern Living" will be published monthly and contain information and stories that will: answer and refute the many false claims made by electricity and other competing fuels; consistently tell the LPG story to the buying public—stressing its many values as a cooking, water heating, refrigeration, industrial, and farming fuel; and provide the TBDA member a service publication that will regularly carry his name into his customers homes, at a nominal cost.

#### Illinois LPGA committees report on plans for 1961

At the November 10 board of directors meeting held by the Illinois LPGA in Springfield, chairmen of newly appointed committees reported plans for the coming year:

Convention Committee—The 1961 Missouri-Illinois L. P. Gas Exposition is scheduled from June 4-6 at the Sheraton-Jefferson Hotel in St. Louis.

Education Committee — Final plans for repeating L. P. Gas Service Training Courses 1 and 2 together with plans for Courses 3 and 4 will be made at a meeting of the convention committee. Discussion of plans for a second L. P. gas carburetion clinic and a school on flame cultivation and weed burning will be held.

Membership Committee—Active members now total 219. The committee will have six more members added to it to make each district



The board of directors of the Minnesota LPGA appointed Dean D. Nolt executive secretary, effective Nov. 1, 1960. Nolt was previously associated with a local radio station at Hutchinson, Minn., working in advertising sales and promotion.

membership conscious. Among supplier representatives, the membership contest for 1961 will be similar to last year's. This spring each district director is to spend one day with the state secretary in making personal calls on nonmember dealers.

Management Conference Committee—A two-day management conference is being tentatively planned for September to include a board meeting and some social activity. The business session would cover such subjects as plant operations, insurance, accounting - cost - collections, public relations, advertising, and safety.

Miss L. P. Gas Contest Committee—A complete program for a "Miss Illinois L. P. Gas" contest, in conjunction with LPGA's "Miss International L. P. Gas" program, was presented.

#### Ohio LPGA convention will help dealers sell their products

The Ohio LPGA has launched an extensive membership drive, headed up by H. S. Hilton, Phillips Petroleum Co., chairman of the membership committee. The association now has 116 members.

The 1961 convention committee, chairmanned by Robert Ayer, is planning the show with the exhibitor in mind. They will help him sell his products and write orders. A prize will be awarded each dealer who makes a \$25 purchase from the displayers. The best booth display will be given an award. In order to give the exhibitors time to sell their products, no meetings will be held during the trade show hours.

#### Northeast LPGA convention highlights LPG opportunity

Advance registration and hotel reservation forms are being mailed out now by the Northeast LPGA for the convention and trade show to be at the Sheraton-Park Hotel in Washington, D. C. From February 6-8 the theme "Spot-lighting L.P. Gas Industry Opportunity" will be in the air.

Those attending the event will hear addresses covering various aspects of the industry and all the tools available for selling new markets on LPG.

The newest in L. P. gas appliances, services, and equipment will be on display at the Sheraton-Park.



O. W. Pittman, Corinth (center) was re-elected president of the Mississippi L. P. Gas Dealers Association at the fall business meeting held recently in Jackson. Elected to vice presidencies were (from left): Henry Graeber, Senatobia; James Watts, Hattiesburg; and T. G. McRae, Meridian. Willie A. Mills of Laurel (right) is the new secretary-treasurer.

## Propane wins over diesels in Chicago bus study

Consulting firm finds cost comparisons heavily favor LPG models, recommends CTA continue to make them major part of its fleet.

CHICAGO TRANSIT AUTHORITY, a pioneer in the use of propane-fueled buses, will continue to buy them for the major part of its fleet requirement if it accepts the recommendation of Arthur D. Little, Inc.

The Cambridge (Mass.) engineering firm, which had spent some five months studying the question of propane-vs.-diesel buses under contract to the Authority, submitted its findings at a board meeting in early December. No action was taken at the meeting. Chairman Virgil E. Gunlock was quoted as saying he "did not know" what would be done about purchasing buses.

The study covered all phases of the competitive situation, making some mention of air pollution and public relations aspects, but the emphasis was on costs. In calculating them, the Little firm considered probable trends in fuel prices, supply and storage of fuel, first costs of equipment, engineering components (engine, ring, cylinder head, and torque converter changes), and maintenance costs plotted against both age-of-busseries and revenue miles.

In addition to urging that CTA continue to put propane buses ahead of diesels in its purchase plans, the report recommended that CTA:

· Consider upgrading the older

propane bus series by incorporating new components and design features of later models.

- Consider a cooperative development program with propane equipment suppliers toward the end of developing the best possible designs.
- Proceed with plans to buy 150 to 300 diesels in order to develop new cost and performance data for use in making comparisons with propane models.

The study's investigation of price trends and factors likely to shape them in the future was exhaustive. Generally, it concluded that the supply of propane in the Chicago market would probably increase in the next three to five years, with "softer" prices. In the long run, however, it foresaw some strengthening of the price structure.

The predicted price trends for diesel were in direct contrast. Improved refinery margins and higher nationwide oil refinery operating levels are expected to contribute to a short-term strengthening. But, said the report, a long-term increase in supply should soften prices.

Another factor touched upon in the diesel situation was the growing demand for commercial jet fuel, which it was felt might pose a threat to price levels of kerozenetype diesel fuels in the Chicago area. However, this situation is a product of a tax structure that may be changed. At present, a loophole in the law makes it advantageous for jets to use this type of fuel in preference to those in the gasoline-boiling range, which are in better supply.

During 1959, the prices CTA paid were 10.1 cents for diesel and 6.2 cents for propane. In early 1960, these prices were trending downward somewhat, leading the Little firm to estimate that the short-term price would level out seasonally at 10.5 cents for diesel and 6.0 cents for propane. But for the longer term, a gradual increase in the propane price to 7.5 cents was forecast, with diesel standing firm at 10.5 cents. It was with these last-named figures that the cost comparisons were made.

The four studies of engineering components were made using thousands of Kardex card records and punching IBM cards from them. Four of the diesel-powered series and seven of the propane-powered series were included.

In comparing engine change histories, the report found that the propane-fueled engines are inherently longer lived than are the diesels that were studied. It concluded that the parts whose need for replacement brought about the changeouts last much longer in a propane engine because of the lack of lube oil contamination.

All propane series showed marked superiority over all diesel series. The four diesel lines were older, however, being 1945-to-1948 vintage, as against propane models dating from 1951, 1953, 1954, and 1955.

As for ring changes, LPG models also outstripped diesels, with the exception of one 1957 series.

The study disclosed that with differential changes, early propane models had a relatively poor history, but newer models did as well as or better than diesels. The difficulty was the result of a large bus chassis having been constructed out of components designed for a small one. Once this difficulty was removed, the Twin Coach propanes did better than diesels in every series.

Propane buses lost the competitive battle on torque converter changes, and even the newer mod-

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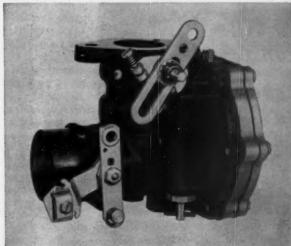
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#### Chicago bus study

els are still having their problems. They also came off second best on cylinder head changes, although the newest models (the 8200-8349 series) show promise. They haven't as yet accumulated enough mileage for the study to be conclusive, however.

In summation of the section, the report notes great improvements in both bus and power plant in each successive series of propane models. The troubles with the early models were to be expected, says

the report, since at the time CTA was pioneering propane buses. CTA, it concludes, has spent a great deal of time and money developing LPG buses, although its investment appears to be no greater than would have been required to operate a diesel fleet; and now, it's in a position to benefit from the investments.

In the comparison of costs, propane buses showed a strong overall edge. The study covered two assumed bus-life periods, 12 years and 18 years. Both high and low estimates were included for each period. The low and high, respectively, for the 12-year period were 13.45 and 14.35 cents per mile for propane. For diesels, using the maintenance levels on the series studied, the per-mile costs would be 16.50 cents. (In the Little studies, the highs and lows for diesel were identical.) Whether the low or high estimate for propane were used, it would still win handily, by 3.5 cents for the low estimate and by 2.15 cents for the high.

On an 18-year basis, propanefueled buses cost 12.76 to 13.82 cents per mile. Diesel buses, based on historical maintenance expense, would run 15.75, both high and low. Again, propane would win, in the former case by 2.99 and in the latter by 1.93.

Now these figures, for diesels, do not take into account improvements in models recently introduced. CTA had too little experience with late model diesels to permit the consulting firm to make valid cost estimates. Therefore, the only way in which the two fuels could be directly compared was to show how much improvement would be needed in diesel buses for them to match propane bus performance.

The improvements required are as follows:

For 12-year bus life, estimating propane costs on the low side: 57 per cent.

For 12-year bus life, estimating propane costs on the high side: 40 per cent.

For 18-year life, estimating propane on the low side: 53 per cent.

For 18-year life, estimating propane on the high side: 34 per cent.

These figures include acquisitions, maintenance (except garage labor), fuel, and storage.

It is interesting to note that, despite the \$1200 difference in acquisition costs favoring propane buses, this was not a big factor in the differential. It amounted to only 0.3 cents per mile.

It's in maintenance costs per revenue mile that the big improvement in later model (1953-4-5) propane buses is most evident. In the earlier models, such costs were actually higher than for diesels after the first 100,000 miles. At 300,000 miles, the difference was about a half a cent. But in the



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Years ago, Chicago Transit Authority pioneered the use of propane buses. Last month, the Authority's judgment was once more reaffirmed when an independent agency recommended that LPG models continue to comprise the bulk of the Chicago fleet.

later models, after the first 50,000 miles, were less costly than diesels. This favorable differential leveled out at about 3 cents per mile.

The propane series of 1958 was not included in this comparison, but the report noted that it appeared to suggest even further improvements.

As can be seen, the difference in maintenance costs was the principal factor that tipped the scales in propane's favor.

The consulting firm also tried to build an index on labor costs for maintenance, but decided that the results were inconclusive because of wide fluctuations. However, what statistics were gathered strongly favored propane.

Estimated fuel costs per mile, using the aforementioned anticipated price trends (level for diesel, rising for propane) favored diesel. For the next five years, diesel was expected to cost 2.4 cents per mile and propane 2.63 cents. There-

after, while diesel would be expected to hold steady, propane costs would rise to somewhere between 2.96 and 3.29 cents per mile.

In arriving at these figures, Little gave the latest diesel buses the benefit of an improvement factor. These buses, the study concluded, should decrease their fuel consumption by 11 per cent.

Bus storage costs favored the propane models, since many of them can be stored outside in the winter. Diesels cannot, generally, because of freezing. On a 12-year-life basis, diesel storage would cost 1.22 cents per mile as against 0.84 cents for propane buses. On an 18-year life, diesel would rise to 1.37 cents per mile (since miles in operation decrease with age) while propane buses would cost .94 cents.

The firm's investigation of air pollution was rather cursory compared with its study of the economics of diesel vs. propane. It noted that the newer diesels, be-

for long wear low vibration fast pick-up JOHNSON VANASIL PISTONS JOHN DEERE Vanasil or Aluminum Pistons—jump power output as much as 25% MINNEAPOLIS-MOLINE "U" Vanasil Pistons-lightweight, yet tough as cast iron

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cause of their lower specific fuel consumption, should give off lesser volumes of objectionable exhaust than the old. However, model for model among those buses already in operation, those fueled with LPG were quieter and gave off less visible exhaust fumes.

Even though their comparison of the possible smog-producing characteristics of the two fuels was inconclusive, the engineers felt that the differences either way would not be sufficient to offset the differences in costs, which so heavily favored LPG. CTA operations contribute less than 4 per cent to particulate air pollution, it was found.

At least one Chicago newspaper read into the report the conclusion that "propane contributes more to smog than does gasoline or diesel." This bald statement needs clarification, however. Little rejected the findings of a "Bi-state report" made in 1959, which guesstimated pollutant contributions by various fuels in several Illinois counties and one contiguous Indiana county.

ADAPTER

This report found that propane is not an air pollution contributor. The Little report preferred to accept the statements of Wallace Linville et. al. of the Los Angeles Air Pollution Control District to the effect that propane engines emit more hydrocarbons than gasoline engines, and equal amounts of nitrogen oxides.

This statement, however, does not square with some other reports of the APCD or with any number of other reports from other agencies. None of the other literature that has come to our attentionand it is voluminous - has labeled propane worse than gasoline. In fact, all such studies show it to be better; just how much better is the only unresolved question. The consulting firm does not make it clear why it chose to accept Mr. Linville's opinion in preference to the findings of dozens of other investigations.

Little does point out that as for visible pollution, only diesel is considered a potential serious offender. Gasoline and propane are not considered problems. The report says that most complaints received by the Chicago Air Pollution Control Department have to do with localized pollution. Where CTA buses are blamed, they are usually diesels.

The report acknowledges that odor can only be measured subjectively, by the human nose. Therefore, it may be inferred that in this type of pollution, as well as with visible pollution, diesel is the real offender among the three fuels. The report virtually gives LPG a clean bill of health on this point.



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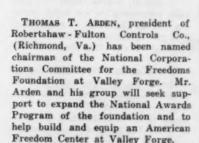
#### PEOPLE

NILSSON S. BASSETT - from sales manager of the industrial systems division (Beltsville, Md.) to the Federal Services Group in Washington as group marketing liaison with government agencies for Minneapolis-Honeywell Regulator Co. (Minneapolis). JOHN O. PAULL-from industrial sales manager of the Pacific region in Los Angeles to succeed Bassett in the industrial systems division. J. F. SMITH -from Southwest regional industrial sales manager at Dallas to succeed Paull in Los Angeles. R. E. HARRISfrom district manager at Tulsa to succeed Smith in the Southwest.

LLOYD L. GRACE—from sales engineer in the northern Midwest to Midwest regional sales manager of the Sprague Meter Co. His headquarters will remain in Davenport, Iowa. He replaces Howard Pierce who died in August of last year. CHARLES CHURCHILL—from Western States Utilities to sales representative in Minnesota, Wisconsin, The Dakotas, and Montana. He will work under Grace's supervision.



L. L. Grace C. Churchill
Sprague Meter Co.



JOHN HUBER—from manager of the Midwestern sales district, to assistant sales director for the heating and air conditioning division of Controls Co. of America (Milwaukee). PERRY CREMEENS—from sales manager in the Midwest district to succeed Huber as manager.

WALTER REEVES, vice president of Sid Harvey of N. J., has been relieved of his present duties to investigate various products that would be suitable for the proposed Sid Harvey diversification program. He will first examine possibilities in the refrigeration and air conditioning fields.

HARRY R. McPHERSON, formerly a retail salesman for a heating and air conditioning contractor, has been appointed sales representative of Janitrol Heating and Air Conditioning Division, Midland-Ross Corp. (Columbus, Ohio).

JOSEPH P. Bowen has been appointed a representative for Parker Seal Products (Culver City, Cal.) in the Minnesota and Wisconsin areas.

JOHN A. CURLEY—from eastern divisional sales manager to the new position of national field merchandising manager of Norge Division of Borg-Warner (Chicago). He will be responsible for market development and merchandising programs for all major accounts.

JUEL M. RANUM has been appointed director of the corporate and public affairs department of Whirlpool Corp. (St. Joseph, Mich.). This is the new title given the company's public relations department. Ranum formerly served as assistant to the chairman and director of public relations.

W. H. McMath—from methods engineer in the industrial engineering department to sales representative in the Birmingham, Ala., district for Wolverine Tube (Allen Park, Mich.). His territory includes Georgia, eastern Tennessee, and Tallahassee, Fla.

E. W. WESTLAND—from sales manager of the eastern division of Wedgewood-Holly Co. of California to manager of Wedgewood-Holly Appliances Inc. (Maspeth, N. Y.), the new eastern sales and service subsidiary of the parent company.

J. L. HUSS, former assistant manager of the stock order department in Cincinnati, is now manager of the newly established customer distribution service department for the Crane Co. (Chicago).



EDMUND A. PRINCE, formerly with Elliott Lewis Corp., has joined Caloric Appliance Corp. (Jenkintown, Pa.) as sales representative. He will work the western New York area.

FRANK J. WAINDLE—from assistant manager of the product service division to marketing manager of domestic water heaters for the Permaglas Division of A. O. Smith Corp. (Chicago).

W. Ronald Mullen, formerly manager of Veterans Butane Gas Co., Andalusia, Ala., has been named manager of the Atmore, Ala., branch of National Butane Co. (Mobile). Frank Chavers, formerly operational manager in National's Evergreen office, has been named head of that branch.

CHARLES C. STOUFFER—from regional sales manager for Hardwick Stove Co., to sales representative for Brown Stove Works Inc. (Cleveland, Tenn.). He will work in the New Jersey and Pennsylvania area.



C. C. Stouffer Brown Stove Works



R. R. Busi Rockwell

ROY R. BUSH, former Midwestern regional manager, has been elected a sales vice president of the meter and valve division of Rockwell Manufacturing Co. (Pittsburgh).

GILBERT M. ELLIS has been named manager of L.P. gas sales for the branded marketing division of Ashland Oil & Refining Co. WILLIAM R. WALLS, formerly district supervisor at Glasgow, Ky., has been named to the new post of L.P. gas merchandising manager.

O. B. BECKNER has been named manager of Allen Butane Co. (Denton, Texas) in Fannin, Grayson, Cook, and parts of Hunt counties (Texas). He also manages Allen's Sherman (Texas) appliance store.

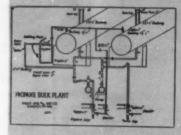
RAY LINDAHL, vice president of the eastern division of the Dri-Gas Co. (Hinsdale, Ill.) has retired.

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#### People

JERRY C. MILLER, former manager of the sales order department, is now representative for United Petroleum Gas Co. (Minneapolis) in the wholesale division. He will cover the Wisconsin-Illinois territory and will have headquarters in southern Wisconsin. Miller replaces R. J. Bell.



J. C. Miller United Petroleum Gas Co.

A. PHILLIP CLARKE, former manager of oil country goods sales, has been named manager of the standard pipe sales department of Lone Star Steel Co. (Dallas). JOE S. SHEPHERS, former sales engineer, succeeds Clarke as head of the oil country goods department.

RICHARD W. CAMP (Oklahoma City) was recently elected a vice president of Arkansas Louisiana Gas Co. (Shreveport). He will direct activities in the new Oklahoma-Kansas division. Camp was president of Consolidated Gas Utilities Corp., which merged with Arkla Gas in August 1960.

T. C. Morrow, owner and operator of Wanda Petroleum Co. (Houston) has been elected to the board of directors of the Continental Bank in Houston.

GEORGE H. OLIVER—from wholesale sales representative for Latin America and the Caribbean to manager of L.P. gas operations for Mobile International Oil Co. (New York).

O. B. Maxwell, 63, president of the Maxwell Co. (Cincinnati), died in November after a long illness. Maxwell was president of National Tank Truck Carriers Inc. during the 1956-57 term. The Maxwell Co. is a major carrier of LPG and other liquids, as well as steel.

LINDEN CHANDLER, 57, vice president and sales manager of Gas Oil Products Inc., Miami, died recently. He was a director of the Liquid Propane Gas Association of Miami and a vice president of the Gas Institute of Greater Miami.

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#### READERS' SERVICE DEPARTMENT

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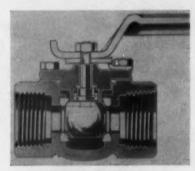
## New Products and Free Literature



## Gas air conditioner may be installed outside

Circle 1 on Readers' Service Card

New absorption-type chilled-hot water central air conditioning system (GEC 020) permits outside installation of a year-round gas heating-cooling unit. Rated at 42,000 Btu cooling, and 96,000 Btu heating. The evaporative cooler is inside panels with the refrigeration and heating system. Arkla.



## Ball valve's top entry simplifies maintenance

Circle 3 on Readers' Service Card

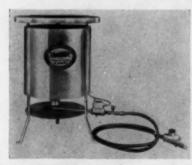
New ball valves come in a bronze body, screw ends with pipe sizes from ½ to 2 in. Top entry, through a removable cover, into the valve simplifies in-line maintenance. The ball is flat on top and bottom, enabling removal from the body if seats need replacing. Lunkenheimer Co. (GEC 820.)



## New regulator design prevents thread galling

Circle & on Readers' Service Card

This new series 1200 4-in. diaphragm class regulator (GEC 700) has 270 cfh capacity. Maximum inlet pressure is 125 psi and outlet pressures are from 5 to 15 in. w. Two-piece design with elbow-type cast iron pipe section prevents galling. Aluminum alloy diaphragm removable. American Meter.



## Heat equalizing baffle distributes heat quickly

Circle 2 on Readers' Service Card

Temporary heat is given quickly for many uses by the new "little giant" LPG salamander (GEC 410). Capacity is 50,000 Btu (85,000 to 100,000 Btu on special orders). The unit radiates, circulates, and spreads heat by means of an equalizing baffle and distributor shield. Hauck Manufacturing.



## Fire extinguisher halts all three classes of fires

Circle 4 on Readers' Service Card

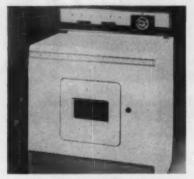
Utilizing a dry chemical powder, this new portable fire extinguisher (GEC 710) is said to halt all three major classes of incipient fires. Comes in 20- and 30-lb capacities and is UL and FM approved. The powder used is non-conducting, non-poisonous and will not harm eyes or skin. Fyr-Fyter Co.



## Surface-top levers adjust cooking flame

Circle 6 on Readers' Service Card

Levertrol valves on the surface of the new "Brownie" built-in gas range (GEC 240) ignite burners and adjust the flame with a touch of the finger. The new Therma-Dome gas built-in oven (GEC 240), as it slides into place, is automatically levelled-up and securely locked into position. Brown Stove Works Inc.



## Washer-dryer combination adapts to all gas fuels

Circle 7 on Readers' Service Card

New combination gas washerdryers (GEC 120) are easily adaptable to all approved gas fuels. The 25,000 Btu main burner is lighted automatically when timer dial switches to drying cycle. A door-operated safety switch stops all operation when loading door is open, and continues when closed. Maytag Co.



## Fibre glass tank cover protects meter and valve housings

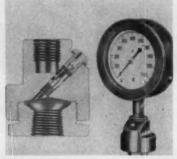
Circle 8 on Readers' Service Card

Features of new polyester fibre glass gas tank covers (GEC 740) are: low cost, anti-corrosion, rust proof, non-conductive, fire retardant, and rat and termite proof. They are unaffected by salt water, spray, or extreme weather conditions. Suitable for meter and valve housings. Crompton and Knowles.

## Pressure gauge accessories offer easy maintenance

Circle 9 on Readers' Service Card

Two new pressure gauge accessories, a "pulsation dampener" and a "chemical attachment" (GEC 540) offer easy maintenance against effects of pulsating pressures or corrosive chemicals. Both have a diaphragm which separates



the measured fluid from the gauge measuring element. Space above the diaphragm is filled with viscous, non-freezing liquid which transmits the measured pressure to the gauge element. American Machine & Metal.



## Conversion burner adjusts in length

Circle 10 on Readers' Service Card

This cast iron LPG venturi burner (GEC 080) adjusts in length to fit all oil-fired furnace and boiler combustion chambers. Input—80,000 to 225,000 Btu. Adams Manufacturing.



## Excess flow check valves designed for large flows

Circle 11 on Readers' Service Card

Constructed from steel bar stock with stainless steel spring and

stem, new excess flow check valves are designed for LPG bulk plant and industrial installations. They have 2-in. male inlet and 2-in. male by 1¼-in. female outlet. Closing flows are 70, 90, and 115 gpm. Fisher Governor Co. (GEC 820.)



#### Filter warning device mounts flush on unit

Circle 12 on Readers' Service Card

The "filter flag," a warning device for clogged air filters, is available in a flush-mounted model. Special thermostat sub-bases provide a red warning light when the filter needs attention. A hole is cut in the blower unit and the mounted filter flag (GEC 350) fastened to the chamber. Minneapolis-Honeywell.



#### Solenoid valve handles high- or low-pressure system

Circle 13 on Readers' Service Card

The new Asco solenoid valve supplements a full line of low pressure valves and fits FM and UL requirements. The valve (GEC 820) may be used in both high and low pressure systems. It has \(^34\)-in. pipe connections, forged brass body and bonnet, and a soft composition disc. Automatic Switch Co.



## Lightweight valve operator may be handled by one man

Circle 14 on Readers' Service Card

A new portable valve operator weighs 38 lb and is easily handled by one man. Quick reverse air "frees up" valve stems fast. It rotates at 20 rpm in either direction. The long torque arm handle acts as a wrench to break valves loose or to seat them completely. E. H. Wachs Co. (GEC 770.)

## Valuable engineering data may be carried in vest pocket

Circle 15 on Readers' Service Card

The Engineer's Vest-Pocket Book (GEC 330) carries all engineering

formulae, properties of structural steel, minerals, saturated and superheated steam, thermal stress, and cost estimating, to mention a few of the 250 main items. Included are an index of the 47 charts and tables and 12 marginal indexed headings. Some listed are: building, mechanics, heat, hydraulics. Ottenheimer Publishers.



#### Staggered burners simplify cooking

Circle 16 on Readers' Service Card

Staggered burners on the 40-in. Epicure gas range (GEC 240) give maximum use of cooking surface. Features include automatic threeway lighting and low-temperature warming oven; Tem-Trol automatic top burner; and comfort-level broiler. Finish is bronze, porcelain or white enamel. Geo. D. Roper.



## Economical thermostat has fixed heat anticipation

Circle 17 on Readers' Service Card

The economical counterpart of D'Luxline thermostats (GEC 190), the Mainline, has fixed heat anticipation to match all primary controls. Sealed mercury contacts give permanent protection against corrosion, etc. Measures 4½-in. high, 2¾-in. wide, and 1½-in. deep. White-Rodgers.

#### THE "MORE" SHE WANTS...FOR THE "LESS" SHE WANTS TO PAY



## BROWN

## FEATURAMIC GAS RANGES

Watch her eyes flash with excitement when she spots the sleek Featuramic styling. Listen to her purr over the host of distinctive features and "must have" conveniences. You're about to close another sale. For Featuramic gas ranges not only deliver the "more" she wants, but at the "less" she wants to pay. Be sure you feature Featuramic gas ranges by Brown for the more you want in sales for '61.

### FREE DOOR PRIZE

CHICAGO: Jan. 6, Space 549A ATLANTA: Jan. 23, Space 401 DALLAS: Jan. 16, Space 178 LOS ANGELES: Jan. 16, Space 60 Lower Level

BROWN STOVE WORKS INC. CLEVELAND . TENNESSE

#### FREE LITERATURE

#### Truck record books and forms

Circle 18 on Readers' Service Card

To assist truck users in evaluating the performance of their equipment, record books and forms for drivers' reports are offered free. The 20-page record book gives an accurate account of all maintenance charges on one truck for a full year. The driver daily report has space for information such as number of trips, trip time, number of

stops, mileage, loads, and fuel and oil consumption. International Harvester Co. (GEC 600.)

#### Gate valves brochure

Circle 19 on Readers' Service Card

A 12-page brochure describes the new line of OIC ductile iron gate valves. Included are the "Pipe Pal" series, in ½-to 2-in. sizes, with spiral wound gaskets, spread flange design; and the "Pipe Mate," in 2-to 12-in. sizes, with buttressed flange connection. Ohio Injector Co. (GEC 820.)

#### **Bulletin on conduits**

Circle 20 on Readers' Service Card

"Condulets for Corrosive Locations" (GEC 810) is the title of a 20-page Crouse-Hinds bulletin, reissued with additional information. Corrosive substances are listed in tabular form with appropriate corrosion-resistant metals and finishes used. Crouse-Hinds Co.

#### Data sheets on filters

Circle 21 on Readers' Service Card

Over 225 items of 20 basic types of standard woven wire mesh element-in-line filters (GEC 350) are described in a series of 20 data sheets. The literature describes working pressure, temperature ranges, port sizes, and shows a cross-sectional view of the element and housing. Pall Corp.

#### Brochure on selecting trucks

Circle 22 on Readers' Service Card

"Proper Truck Selection" is the subject of a new eight-page, two-color brochure (GEC 530). The information contained will give the materials handling engineer information which can be retained as a ready reference to everyday handling problems. Automatic Transportation Co.

#### Circular on ball valves

Circle 23 on Readers' Service Card

The new Lunkenheimer ball valve is described in a two-page, two-color catalog sheet. Circular 611 details operation, shows cutaway views, ratings, design features and dimensions, and reports on applications and advantages. Lunkenheimer Co. (GEC 320.)

#### Infra-red burner data

Circle 24 on Readers' Service Card

A four-page data sheet describing a new gas-fired infra-red burner, contains applications and performance curves for evaluation, selection, and specifications. The burner (GEC 400) is designed for low-temperature industrial processing applications. Bryant Industrial Products Corp.

#### Folder on built-in ovens

Circle 25 on Readers' Service Card

A consumer folder, describing the Vesta gas built-in oven, (GEC 240), pictures and explains features, dimensions, and instructions for ordering. Athens Stove Works Inc.

# CUT FUELING AND BOTTLE-FILLING TIME! with Viking's 5-10-20 30 G.P.M. LP-Gas Pumps



MODEL FN-696 — 5 G.P.M. — This is the most compact, light weight Viking LP-Gas fueling pump. Has same sturdy Viking "gear-within-a-gear" construction as larger models. Mounted directly to flanged 1/3 HP, single phase, 3450 RPM motor. Pump includes ball bearing construction and safety by-pass valve.

MODELS GB, H and HL-196 — 10 G.P.M., 20 G.P.M. and 30 G.P.M. — For fastest fueling and bottle filling of LP-Gas, use one of our three motor driven units. All equipped with mechanical seal, ball bearing and 0-ring construction with safety relief valve on suction port and safety by-pass valve on pump head. ½, ¾, 1 and 1½ HP, 1750 RPM motors.



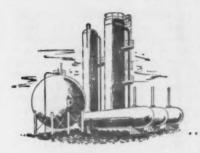


MODELS GG, H and HL-198 — 12 G.P.M., 20 G.P.M. and 30 G.P.M. — The same Viking LP-Gas pumps as on motor driven units shown above, except direct connected to 4 stroke cycle gasoline or LP-Gas powered engines. Equipped with rewind starter, shielded ignition system, flame arresting muffler, flame arresting air cleaner and ground connection. 1.3 HP, 2200 RPM and 3.7 HP, 1800 RPM sizes used.

For complete information, send for catalog HB today.

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## industry news

## Suburban Propane listed on New York Stock Exchange

ON NOV. 28, the nation's largest independent distributor of LPG, Suburban Propane Gas Corp. of Whippany, N. J., became the second LPG marketer listed on the New York Stock Exchange. That sound-alike western firm, Suburban Gas Service of Pomona, Cal., beat Suburban Propane Gas to the big board by exactly eight months, having been first listed on March 28.

While traders may become somewhat confused by the company names, they won't be by the symbols on the board. The eastern company chose the first three initial letters of its name, "SPG",

after the western firm used the first three letters of the first word of its name, "SUB." Both companies also went on the Pacific Coast Stock Exchange.

Public ownership is nothing new to Suburban Propane, since it was the nation's first publicly-owned LPG marketer. After 17 years as a private concern, it was incorporated in November 1945. Since that time, trading has been over-the counter. In the first year of the corporation's existence, approximately 3000 people invested in the firm. Today, there are well over 13,000 stockholders and this figure

is now expected to increase considerably with the board listings.

Participating in the listing ceremonies were the founder and president, Mark Anton; his son, Mark J. Anton, vice president in charge of sales; and his grandson, Mark Anton II, age 3. The youngest Anton temporarily held the spotlight as he purchased the first 100 shares sold on the exchange. Other Suburban Propane personnel participating in the ceremonies were: R. Gould Morehead, financial vice president; William B. Jennings, secretary; and directors Lloyd S. Gilmour, Edward T. Herndon, and Sylvester C. Smith, Jr.

Anton founded Suburban Propane in 1928 as a one-man, one-customer (himself) operation. To-day, it operates from 98 sales and distribution points and serves close to one-half million homes, as well as thousands of farms, commercial establishments, and industrial plants. One day's current sales exceed the entire industry's annual volume (222,641 gal.) for the first industry year on record—1922.

Among the company's current asseta are underground reserves of 12.6 million gal. of LPG and two subsidiary companies, Charlotte Tank Corp. of Charlotte, N. C., and Suburban Appliance Co. of Dayton, Tenn. Charlotte Tank manufactures storage and truck tanks for the parent company and for sale to the industry. Suburban Appliance makes room heaters, water heaters, clothes dryers, and other appliances.

Earnings for this giant company for the first nine months of 1960 totaled \$1.67 million as opposed to \$1.30 million for the same period in 1959. That's a per-share increase from \$0.85 to \$1.11. Suburban Propane has a record of 59 consecutive quarterly dividends, dating back to the first year of its



As three generations of Mark Antons take part in the ceremony listing Suburban Propane on the New York Stock Exchange, Mark J. Anton points to the fact that the stock opened at 191/6.

corporate existence. The current dividend is \$1.00 per year, a return of approximately  $5\frac{1}{2}$  per cent on the current market price.

## Co-op, TVA projects favored under Kennedy administration

Rural electric cooperatives, farmer cooperatives, and the Tennessee Valley and other public power projects will be riding high under the new Kennedy administration.

Statements by President-elect Kennedy, his running mates, and the Democratic party made during the campaign and since the election make it clear there'll be expansion of this subsidized competition. There is no hope for L. P. gas dealers to make any headway in their efforts to get government action to ease the impact of these programs through higher interest rates, more realistic taxation, or boundary limitations.

Just before the election, a Kennedy campaign official (Carl Hamilton, a former administrator of the REA) accused the Eisenhower administration of trying to "starve REA out of existence" by attempting to raise the subsidy two percent interest rate and turn the power co-ops to private money sources for some of their financing. He said the Democratic Congress "forced" funds on the Republican administration to keep the program expanding.

The President-elect makes it clear that he intends to try to expand the REA system after taking

The new President is also backing the farmer purchasing and marketing co-ops as "essential," and promises to encourage their growth by "expanding and liberalizing existing credit facilities if necessary." He also says he plans to back legislation to make it clear that farmer co-ops have the right to expand into retail and processing operations. Co-ops have been blocked by the courts under the antitrust laws from owning retail and processing facilities.

Mr. Kennedy charges that farmer co-ops have been "harassed by confusing, conflicting, and openly hostile policies of the Republican administration's treasury and justice departments."

Throughout the campaign and since the election, the President-elect and his advisors have promised to materially expand public power projects, or "new starts," for both new electric power and flood control reasons and as a government anti-recession spending move.

## Flaming research moves south for the winter

Flame cultivation research, which has been carried on successfully for the past two seasons at High Plains Research Foundation, Halfway, Texas, has now moved south to the Rio Grande Valley for the winter.

Says Dr. Tom Longnecker, director of the foundation, "By continuing our work at Rio Grande in the winter, we can now combine two years' experience into one."

Dale Price, foundation agricultural engineer, left in early December for Edinburg, which will be headquarters for a three-month program. LPG dealers and farmers in Edinburg and Mercedes are cooperating in providing acreage and crops for the projects.

Work that was done at High Plains this past summer on potatotoes, onions, and lettuce will be continued in the Rio Grande. Flam-



When a predicted storm casts its ominous threat over the country-side, the LPG distributor is one person who knows he and his customers will have smooth sailing through the worst weather.

Because one glance at his Visible Master gauge assures him that sufficient fuel levels are on hand to supply all his customers' needs. Their well-being in any kind of weather is mirrored in its dependable face.

This man and the hundreds of homemakers, farmers, truckers and all others who depend on him know they can place their trust in Visible, because Visible means years of accurate, dependable performance . . . performance that has made the Taylor Visible gauge the largest selling LPG and NH3 float gauge in the world . . . the "Standard of the Industry."



1213 SOUTH AKARD . DALLAS

ing of grain sorghum will also be studied, along with carrots, tomatoes, cauliflower, Brussels sprouts, broccoli, cabbage, table beets, sugar beets, sweet corn, green peppers, and Jalepenos peppers.

Crops that will be under observation at the foundation in 1961 will include sesame, sugar beets, peanuts, and vegetables. Research will also be continued on cotton, grain sorghum, soybeans, corn, and castor beans.

#### "Campaign calendar" maps gas industry '61 promotion

The gas industry's new promotion plans for 1961 are outlined in a "campaign calendar." It is designed to aid gas utilities, dealers, and manufacturers of gas appliances by mapping their campaigns a year in advance, month by month, day by day.

January is the month for gas dryer promotion, followed by gas water heaters in February and househeating in March. Gold Starranges will hold the spotlight in April, gas air conditioning in May and gas lights in June.

July effort will be focused on gas refrigerators and automatic gas incinerators will be pushed during August. In September a return to Gold Star "top-of-the-line" ranges is scheduled.

October has been chosen for a three-way promotional drive to include Blue Star gas-equipped homes, New Freedom kitchens and laundries and industrial and commercial gas sales.

In November, AGA's Home Service and Educational Service programs will be promoted. The gas industry's annual holiday appliance push will highlight the December page of the calendar.

Special supplements in bulletin format will be issued to provide additional information on promotional plans and materials.

#### Merger brings about new product line

The Bastian-Morley Co. Inc., La Porte, Ind., and its subsidiary, H. C. Little Burner Co. Inc., San Rafael, Cal., were combined December 15, 1960.

Emerging from the transaction is a new product line, Basmor-Little. Included are Basmor gas and oil-fired boilers, gas and electric water heaters, Imperial and Clipper gas furnaces, SaftiVent sealed combustion gas wall heaters, Desert Sun vented recessed gas "Frequent check-ups on bulk plant operations pay off in reduced operating costs..."



says Bob Murphy Tri-State Propane Gas Company South Sioux City, Nebraska

"I have found that it pays to take a close look, periodically, at my bulk plant operation, and this is when I really appreciate Union Texas Natural's engineering department. These specialists spend 100% of their time on LP-gas engineering and I've found that they have a ready answer to even the most difficult technical problems."

#### ENGINEERING at Union Texas Natural means . . .

- the personal attention of industry specialists in solving the problems of bulk storage
- the streamlining of your transportation facilities for maximum efficiency
- the control and elimination of safety hazards from your overall operation
- the complete service required to work out the design and installation of new equipment . . . or to remodel existing facilities

Call Union Texas Natural for expert advice and assistance in making the changes in operations that will mean more profits to you. Our engineering specialists will be glad to visit you at your convenience.





UNION TEXAS NATURAL GAS CORPORATION
ENTERPRISE BUILDING
TULBA CHLAHOMA

wall heaters and floor furnaces, and Basmore smokeless-odorless gas incinerators.

Bastian-Morley will continue manufacturing operations in plants at LaPorte, Ind.; San Rafael, Cal.; and Pittsburgh, Texas.

The separate sales organizations of the two firms will be merged into one. Don Johnston has been named national sales manager and will direct the activities of five regional sales managers. These five managers will supervise and assist five district managers.

The new sales organization structure will give complete coverage of the United States and Canada and afford maximum service to Basmor-Little distributors.

## Milwaukee Gas Light buys three propane companies

It has been announced that Milwaukee Gas Light Co., Milwaukee, has recently purchased City Gas Service Inc., Wisconsin Rapids; Wisconsin Rapids Gas & Electric Co.; and Wisconsin Rapids City Gas Co. for \$1,641,000.

The buy included all the propane plants, gas service equipment, trucks and other personal property located at Wisconsin Rapids, Clintonville, and Little Chute, Wis., and in the areas of dealers and on customers premises throughout central Wisconsin.

Also included in the purchase were the utility propane distribution systems operated by the companies in Wisconsin Rapids, Port Edwards, and Nekoosa.



At the National LP-Gas Council's booth at the recent Farm Progress Show in Will County, Ill., the new L. P. gas infra-red broiler drew the interest of thousands of homemakers. In cooperation with the council, Pyrofax Gas Corp., New York, demonstrated the features of automatic LPG home appliances.

The Wisconsin Rapids "City Gas" Co. utility was in the process of building a \$2,750,000 natural gas distribution system in the cities of Wisconsin Rapids, Nekoosa, and Port Edwards. This work has been completed by the Milwaukee Gas Light Co.

#### Muellerleille elected to Gas Inc. board of directors

Richard H. Muellerleille, National Propane Corp., Garden City, L. I., has been elected a board member of Gas Inc., a group organized in early 1960 to plan and

operate the gas industry's building at the 1964-65 World's Fair in New York.

Walter Dorwin Teague Associates have been appointed to design the \$5,500,000 gas exhibit at the Flushing Meadows Fair Grounds. Andrews & Clark will have charge of construction of the exhibit, which will occupy three-fifths of the 50,000-sq-ft-lot leased by the industry. Landscaping will be handled by Clarke & Rapuano.

All or most of the materials used in constructing the display area will be either gas processed or of a type in which natural gas is a principal raw material.

More than 3000 products that are made out of natural gas today did not exist five years ago. The exhibit will account for much of that growth.

#### Robertshaw-Fulton develops new clothes dryer control

A new automatic regulating device to control the length of the drying cycle in mechanical clothes dryers has been developed by the Thermostat Division of Robertshaw-Fulton Controls Co.

Known as the "timer-less control" (TLC) system, the regulator shuts off the dryer when the clothes have reached the desired degree of dryness, avoiding overdrying.

The system gears itself to the size of the load, the type of fabrics it contains, and the moisture



One of the largest propane barges in service (195 ft long and 50 ft wide) now supplies Tamak Gas Products Co.'s West Memphis terminal. The terminal has twenty 30,000-gal. storage tanks with an initial capacity of more than half a million gal. of LPG. Capacity of the three barge tanks is 546,000 gal. Each tank is 14 ft in diameter and 163 ft long.

content in the clothes. A new sensing principle determines when the moisture is out of the wash.

Shut-off time is found by measuring the drop in air temperature as the TLC passes through the wet clothes in the dryer. This measure determines the rate of evaporation taking place so the control can calculate accurately the length of drying time for any load. Settings for mixed and regular loads of all sizes are provided with the system.

## Petrolane stock dividends, acquisitions disclosed

Petrolane Gas Service Inc., Long Beach, Cal., voted a quarterly dividend of 15 cents per share on common stock, payable Dec. 22. This represents a 20 per cent increase over the previous cash dividend rate, taking into consideration the effect of the two-for-one stock split which became effective Nov. 15, 1960.

The company also announced the recent acquisition of three L. P. gas outlets located at The Dalles, Hood River, and John Day, Ore. This introduces Petrolane to a new marketing area in Oregon and brings the number of plants in the 11 western states to 159.

## UPG expands into natural gas distribution

Diversa Inc., Dallas, has expanded its operations into the field of natural gas distribution.

United Petroleum Gas Co., Minneapolis, a wholly-owned subsidiary, has begun the flow of natural gas to Detroit Lakes in northwestern Minnesota. Distribution was initiated in Ada, Minn., in late November.

Expansion plans call for the installation of natural gas distribution systems in nine more communities in the north central states during the next three years.

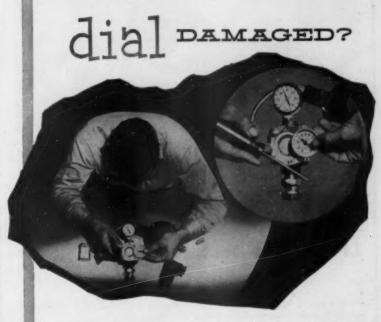


#### Electric hot water tank demolishes small house

The following is taken from the Safety Bulletin issued by the office of C. Chester Pate, L. P. gas administrator for the State of Oklahoma:

"The sheriff of Cherokee County called about an explosion four miles west of Cookson. A four-roomed house was completely demolished. There was no sign of any gas installation.

About 75 ft from the building was the top of an electric hot water tank, the bottom of the tank was about the same distance the other way. The tank had blown through the building, tearing 2 x 4's and 2 x 6's like toothpicks. All of the windows were blown out of the building and the pump house, 10 ft from the house, was moved. L. P. gas gets the blame for a lot of accidents—but this one was caused by electricity!"



## It's easy to replace if it's ROCHESTER Criterion

Merely remove the damaged dial with a screwdriver and replace with a new hermetically sealed Rochester dial — you lose no gas, even with full tanks! This exclusive Rochester Criterion feature means extra profit for you.

Demand Rochester Criterion gauges on your next tank order or order direct from factory.



#### ROCHESTER GAUGES, INC.

OF TEXAL

2425 CAROLINE - DALLAS, TEXAS

SALES OFFICES: DALLAS: ATLANTA; BURBANK; DENVER; CLEVELAND; ROCHESTER; LONDON, ONTARIO



The first section to be laid on the Trans-Southern line is maneuvered into place in readiness for spanning the Tombigbee River. The kickoff took place in late November.

## Construction starts on first LPG line to the Southeast

WITHIN A MATTER OF WEEKS after Transcontinental Gas Pipeline Corp. had announced it would build a cross-country LPG line, construction was under way.

The pipeline, to be built and operated by Trans-Southern Pipeline Corp., a newly formed subsidiary of Transco, will transport up to 60,000 bbl of LPG per day from Mont Belvieu, Texas, to Danville, Va.

The first step in construction was the spanning of the Tombigbee river in Alabama, which lies at the half-way mark on the 1300-mile line. The 10-in. pipe, which has a ½-in. wall thickness, was lowered into a ditch 11-ft deep beneath the floor of the river, which at this point is 40 to 54 ft deep and 365 ft wide. The total length of the span is 865 ft. For added protection, the pipe was coated with asphalt mastic and a shell of planking,

strung longitudinally and wired in place.

With the early start, Trans-Southern expects to have its line in service by November of this year. The total cost will run to an estimated \$63 million. When completed, it will transport product from plants and refineries in Louisiana and Texas to terminals in Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia, Florida, and Tennessee.

Supply will be leveled out with the help of underground storage. In Louisiana, underground storage caverns with a combined capacity of 350,000 bbl will be mined out of salt domes. Caverns carved out of granite near Atlanta, Ga., will store another one million bbl.

Trans-Southern will be the first LPG pipeline to serve the Southeast.

#### **NEWS BRIEFS**

Rockwell Manufacturing Co., Pittsburgh, recently opened newly expanded and modernized chemical engineering research laboratories near the main headquarters. The quartermillion-dollar facilities have three principal objectives: To evaluate and promote the use of new materials in a constant search for product improvement; to maintain a constant check on the wide variety of materials being used; and to develop new lubricants dispensing equipment. Rockwell's chemical engineering staff is headed by R. J. Sarraf.

The new high-capacity gas-fired boiler, "Series 170," will be exhibited by Peerless Heater Co., Boyertown, Pa., at the 15th International Heating and Air Conditioning Exposition in Chicago, February 13-16. The 170 is claimed to have the highest Btu input of any iron boiler manufactured in the U. S. or Canada. Peerless plans to exhibit its entire line of boilers and furnaces.

Cities Service Oil Co., Bartlesville, Okla., has consolidated operations of domestic oil exploration, production and related activities in Shreveport, La., with headquarters in Bartlesville. On December 3, 1960, Cities Service became owner of all the outstanding stock of Arkansas Fuel Oil Corp. Marketing operations of Arkansas Fuel and other Cities Service subsidiaries are under study with a view to improve operating efficiencies.

Ownership of all divisions of the Majure Gas & Appliance Co., One-onta, Ala., has been transferred to Fred Lewis, Acworth, Ga., by H. K. Majure. The four company branches in Oneonta, Gadsden, Springville, and Blountsville will continue operating. The reported sales figure was approximately \$750,000.

Wedgewood-Holly Co. of California has formed a new subsidiary in the East. The new company name is Wedgewood-Holly Appliances Inc. Offices are located in Maspeth, N. Y. Sales, sales promotion, and service for one-third of the eastern part of the country will be handled by the subsidiary.

Arkla Air Conditioning Corp., Little Rock, Ark., has appointed the S. J. O'Brien Cos., New York as distributor. The latter company is one of the largest refrigeration service organizations and handles about 350,000 individual accounts.

## LPG freezes sea water, makes it fit to drink

THE USE OF butane or isobutane to make salt water potable has been successfully demonstrated by the Blaw-Knox Co.

The process was described by George Karnofsky, Blaw-Knox engineer, at a meeting of the American Institute of Chemical Engineers in Washington last month.

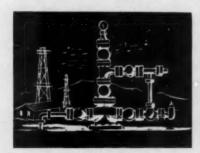
Butane under pressure is brought into contact with the salt water at a pressure slightly below atmospheric. As the pressure on the butane is released, it boils off; and the heat of vaporization freezes the water into a slush, from which the salt can be washed off.

By reversing the process, the ice is melted. Slightly compressed but still in the vapor state, the butane is brought into contact with the ice. Since its temperature is slightly above 32 deg. F., the ice melts and the heat absorbed by the melting ice liquefies the butane.

Although several problems must still be solved before the process can be used commercially, a pilot plant is successfully operating in Japan, and Blaw-Knox has built a 35,000-gal. per day pilot plant for the U.S. Interior Department at St. Petersburg, Fla.

The company believes a commercial plant with a 5- to 10-million gal.-per-day capacity could be economic.

Just how much butane or isobutane would be consumed in the process was not divulged. However, it was stated that the loss of butane would be low, since the system employs a closed cycle.



## NSOME



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Brown Stove Works Inc., Cleveland, Tenn., wound up a year-long silver anniversary celebration with the presentation of sterling silver tea services and punch bowl sets to all 25-year employees. The recipients are (from left): G. C. Brown, president, Mr. and Mrs. L. L. Harle, Mr. and Mrs. R. L. Hobbs, Mr. and Mrs. Buford Million, Mr. and Mrs. Oscar Hindman, Carl Ownby, Frank Patterson, Mrs. A. L. Hobbs, W. T. McGhee, and A. L. Hobbs.

Allis-Chalmers Manufacturing Co., Milwaukee, plans to build a multimillion-dollar engine manufacturing plant at Harvey, Ill. Produced at the factory will be LPG, diesel natural gas, and gasoline engines. The company's farm machinery plant at Independence, Mo., will expand its factory production capacity approximately 40 per cent.

Gas-fired automatic water heater sales lagged for the month of October and for the 10-month period. During the month, 192,900 units were sold, which is 29.6 per cent behind last year's figure of 274,200. The 10 months' total this year was 2,308,300 or nine per cent behind last year's total of 2,561,600, according to Gas Appliance Manufacturers Association.

Controls Co. of America, Schiller Park, Ill., was recently listed on the Pacific Coast Stock Exchange. Stock is also listed on the New York Stock Exchange and Midwest Stock Exchange. On the trading floor, the company will be known as "CTC."

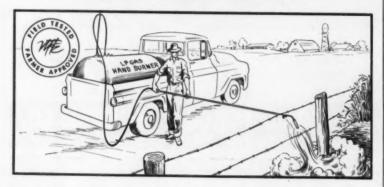
Dearborn Stove Co., Dallas, has appointed Paul Berry Co., Dallas, as its advertising, sales promotion, and public relations agency.

Welbilt Air Conditioning and Heating Corp., Farmingdale, N. J., is expanding its sales force to include manufacturers' representatives. The reps will handle sales of products to distributor and dealer markets across the U. S. C. M. Hatcher has been named field sales manager and will assist in developing field representatives.

The Humble Oil Co. has donated 5200 to 6000 gal. of LPG to the Kentucky LPGA for use by the agricultural engineering department of the University of Kentucky. The same size donation was given the association last year by Phillips Petroleum Co.



## assures PROFITS for you!



Manchester, the finest LP Gas Weed Burning Equipment, backed by an aggressive sales plan, gives your customers a successful method of cleaning green weeds from irrigation ditches, fence rows and roadways.

Make money serving a real need. Send for full details today!

Ask for Sales Kit No. 61

ANCHESTER TANK & EQUIPMENT CO.

2880 NORTON AVENUE, LYNWOOD, CALIFORNIA

NEwmark 1-9357 • NEvada 6-5784

The Garland Division of Welbilt Corp., Maspeth, N. Y., has been selected to service the cafeteria at the New York World's Fair administration building with its commercial cooking line. Stainless steel equipment to be installed includes two heavy-duty gas ranges, a heavy-duty gas broiler, and two deep fat fryers.

Norcold Inc., Los Angeles, recently received AGA approval on its Astral built-in model A160 gas refrigerator. The model is two cu ft in size. Norcold has been the major supplier to the travel trailer industry in the refrigeration field, and through the next season will offer its product to builders and architects.

Directors of California Liquid Gas Corp. voted to split the common stock by way of a stock dividend on a twofor-one basis. This split increases outstanding shares from the former 375,437 to 750,874.

Our Gas Co., Tremonton, Utah, has been purchased by California Liquid Gas Corp., Sacramento. Former owners, Merrill H. Hall and Vern J. Nelson, will continue as employees of the company with Hall as manager.

The State of Illinois has ordered 123 asphalt trailer kettles for highway maintenance operations from Hauck Manufacturing Co., Brooklyn, N. Y. The kettles are tube-fired and all but four will burn LPG. The remainder will use kerosene.

A British cigarette lighter manufacturer has designed a butane table lighter with a fuel capacity of up to three years. The constant flame, once adjusted to the required height, is said not to vary, regardless of external temperatures. This claim has been tested by freezing the lighter.

The United States Patent Office has approved the trademark application filed by Keating of Chicago Inc., for its new Wimco oven. Wimco is a coined word identifying the oven—the "w" stands for "whirlwind," the "i" for "isothermic," the "m" for "muffled," the "c" for "convection," and "o" for "oven."

American Meter Co. has built a new sales office and warehouse in Atlanta. The address is 200 Ottley Drive, SE.

Winter commuters in Jamaica, N. Y., who spend many waiting hours on railway station platforms will soon have relief from the cold. A



Pyrofax Gas Corp., New York, recently honored 25-year-service personnel with a luncheon presided over by President Walter A. Naumer. Those receiving awards are (from left): Roy Deems, Medford, N. Y., plant superintendent; C. C. Doran, Western Pennsylvania district sales supervisor; W. A. Harper, Michigan management service supervisor; Mr. Naumer; C. P. Keeley, manager of research and development; and D. G. O'Meara, general sales manager. Each employee received a 25-year certificate and an inscribed wrist watch. Miss R. T. Donovan (not shown) was given an inscribed 100-year clock.

battery of eight gas-fired radiant heating units is being installed over a 30-ft section of the Long Island Rail Road platform. Brooklyn Union Gas Co. worked with the railroad in the design of the test pattern for location of the heaters. If the installation seems worthwhile, a company official said the heating system would be extended.

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#### Economical-Highly Efficient

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- Easy mounting and transporting is assured by the sturdy lightweight construction of Flamegas Rurners.
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Well Type FL-5 2,000,000 BTU equipped with 16" Hose and 499MB regulator.

- OPERATES ON LIQUID OR VAPOR PROPANE (LP) GAS
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All Classified Advertising payable with order. No agency commission or cash discount on classified advertising. Copy must reach publisher's office prior to the 1st of the month preceding publication. Address: Classified Advertising Materials, BUTANE-PROPANE News, 198 S. Alvarado Street, Los Angeles 57, Call.

#### DISPLAY CLASSIFIED

\$12.00 a column inch per issue. Choice of 18, 14, 12, 10 pt. display type for headings. Set with 1 pt. border. Maximum ad size 3". No cuts permitted. Publisher will set ad for maximum effect in space purchased.

UNDISPLAYED CLASSIFIED 15¢ a word. Set in 6 pt. type without border. \$6.00 minimum charge per insertion. If Blind Box number eare of B-P News is used, count as five words.

POSITION WANTED. Undisplayed rate is one half of above rate, payable in advance.

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#### SITUATIONS WANTED

AVAILABLE—13 YEARS MANAGEMENT own Propane Business—8 years Sales Super-visor appliance manufacturer—Past President State Association. Reply Box 2, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

#### HELP WANTED

EXPERIENCED SALESMAN IN ALL PHASES of Propane gas business. Base salary, plus commission and transportation furnished. McMinnville Gas Co., McMinnville, Oregon. Phone 10593.

#### BUSINESS OPPORTUNITIES WANTED

WANTED TO PURCHASE: RETAIL LP-GAS business in Midwestern or Southeastern states. Reply Box 4, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

#### WILL PURCHASE GOING LP GAS BUSINESS

Retail or Wholesale. Southeastern or Midwestern states preferred by responsible party. Sand details to:

Box 59, BUTANE-PROPANE News 196 So. Alvarado St., Les Angeles, Calif.

#### BUSINESS OPPORTUNITIES OFFERED

LPG BULK PLANTS. WE SPECIALIZE in selling petroleum properties throughout Midwest. Have number desirable plants for sale. OLE BRODD, PETROLEUM MARKETERS, 665 Produce Bank Bidg., Minneapolis, Minnesota.

LP-GAS AND APPLIANCE BUSINESS IN Colorado. 24,000 gal. storage, 2 trucks, 1 pickup, 140-100 lb. cylinders. Population of town 2300, in heart of irrigation district. No natural gas in town or area. Write Box 1, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

#### FOR SALE - TRUCKS - TRAILERS

USED PROPANE DELIVERY TRUCKS, 1200 to 2200 W. C. Presently in use and being replaced with larger units. United Petroleum Gas Co., 4820 Excelsior Blvd., Minnestapolis 16, Minnesota

FOR SALE—USED 1956 FRUEHAUF TRAILER, 9135 water gallon capacity. 1958 Trinity Trailer (7-1 Steel) 10,300 water gal-lon capacity. 1959 International Cab over Tractor (45,000 miles on new engine) Wgt. 13,000 lbs. 1954 International R-195 (35,000 miles on new engine) Wgt. 13,500 lbs. Pet-roleum Distributors, Inc., 2804 S. Main St., Goshen, Indiana. Phone KE 3-6945.

#### 1400 TWIN barrel on 1955 F-600 Ford

New Motor, 4 New Tires on rear and 2 very good tires on front, 2-speed axle. Neptune Print-O-Meter, Viking Pump, 100 ft each vapor and liquid hose, dry chemical Fire Extinguisher, LP-Gas Carburetton. Flody and paint excellent. Replaced with larger unit. Available immediately. BURK HOLDER'S. TAylor 7 0114, Sedalia, Missouri.

#### FOR SALE-TRUCKS-TRAILERS-Cont.

I.ATE MODEL USED SINGLE AND TWIN BARREL PROPANE TRANSPORTS. From 5,000 to 10,000 gal. sizes—leas than .01¢ per gal. All reconditioned, painted, and with new recaps—Getum now! Call "The Tradingest Monkeys in Texas" in "Cowtown" at JE 6-2848 or write P. O. Box #15333, Ft. Worth, Texas.

EXCELLENT QUALITY USED TRANS-PORTS—Trinity's "trade-in transports" are tops in low-overhead value. Because Trinity sells more new transports—Trinity has the choicest "used transport" selections—late models—new paint—good rubber and ready to make you money. Twins (3600/6500 W.G.), blimps (7000/7400W.G.), and neckdowns. Low down payment and terms. Phone FLeetwood 7.3961 now. Trinity Steel Co., 4001 Irving Blvd., Dallas 7, Texas.

1951 CHEVROLET CAB-OVER, 1500 gallon, single barrel, 9:00 x 20 tires, propase car-buretion, 100' 1" liquid, 100' 36" vanor, electric reel, 50 GPM Viking pump, printing meter, recently painted, unit in good condition. \$3000.00. Contact Gaile Voiles, Morgantown, Indiana, LY 7-4451.

TWO DELIVERY TRUCKS AND A TRANSPORT. All ready for immediate service and in good condition—call us today! 1954 Chevrolet—1,350 gal. w. e. twin barrel, 1½ "Neptune print-o-meter, Viking pump and 50" hose. Price \$1,500.00. 1954 Chevrolet—1,170 gal. w. c. single barrel, 1½" Neptune meter, Viking pump, and hose. Price \$1,350.00. One 5.400 gal. w. e. twin barrel transport, good rubber, bargain at \$1,900.00. Call, wire or write Detert Reynolds or Junior Durbin, AMherst 1.3500, Uregas Service Incorporated, Mobetly, Missouri.

1955 I. H. 160 WITH TWIN 700 gal. 250# tanks, enclosed fittings on rear, Viking pump, meter, hose-working now-83275.00. Call or write "The Tradingest Monkeys in Texas", P. O. Box #15333, Pho. JE 6-2848 in "Cowtown", Texas.

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Truck Tank . latest ASME Code .
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Print Meter, 20 lb Fire ext., lights,
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\$372.00 more. WE TRADE. 4 Models in 1400 to 2600 gal. TWIN or
SINGLE. GMC's .. FORD's .. INTERNATIONAL's at FLEET PRICES.

Call-PRESTON GRACE

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**DUpont 2-5416** 

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TWIN 900 GAL. MASTER TIME-SAVER tanks mounted on 1955 I. H. 170, complete with pump, meter, hose reel-working now-F.O.B. Ft. Worth-33995.00-will take trade and can finance. Call or write "The Tradingest Monkeys in Texas," P. O. Box #15333, Ft. Worth, Texas. Phone JE 6-2848.

FOR SALE: 30,000 GAL. TANKS—SHIP TODAY! Never used, yet chemically protected. Including tank piers, 250# ASME, painted, all accessories, ladder and platform, valves—with craplete piping for tank and immediate 80w lines!! BOB ROSS, INC., 10918 So. Western, Chicago 43, Ill. BEverly 8-0450.

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1500 water-gallen Twin Barrel Propane Truck Tank, trim skiried complete with KK200 Viking pump, Naptune 1½" Printenenter, Hannay electric explosion-proof hose real, 100 ft. of 1" and ½" propane hose. Finish painted white enamed on your track—\$2700.00 plus tax. Tank with skirting and fittings only—31500.00 plus tax. Immediate delivery, Supply limited—HURRY, Call or writs today! Columbian Steel Tank Company, 1500 West 12th Street, Kansas City, Mo.

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FOR SALE—ASSORTED QUANTITY OF 56" and %" Brass Flare Fittings. Write Bahamas Gas and Fuel, P. O. Box 1553, Nassau, Bahamas.

#### SERVEL GAS REFRIGERATORS

With cross top freezers — late model, glass Freezer door, vegetable crispers. Used, excellent condition, guaranteed in good operating order.

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#### **Butane-Propane News**

198 S. Alvarado Street, Los Angeles



Lighting the gas lamp symbolized the recent official opening of Robertshaw-Fulton Controls Co.'s new thermostat division plant near Youngwood, Pa. Cost of the new structure was \$4 million.

Doing the honors is Christy Payne Jr., Consolidated Natural Gas Co., Pittsburgh. Shaking his hand is Robertshaw-Fulton President, Thomas T. Arden.

Present at the opening are (from left): Harold Walker, AGA; Frank Hodgden, managing director of the Cleveland AGA Laboratories; George Coulter, Manufacturers Light and Heat Co., Pittsburgh; Frank H. Post, general manager of the new division; and Gilbert Smith, Equitable Gas, Pittsburgh.

Total working space in the new plant is 360,000 sq ft.

This new facility is one of three recently built or planned by Robertshaw-Fulton. In September, the company opened its Eastern Research Center at King of Prussia, Pa. Later, it announced the purchase of six acres of property in suburban Richmond. There the company plans to build a two-story corporate headquarters. Construction is to begin in late spring or early summer of this year.



"Maybe we should come back tomorrow?"

#### CALENDAR

All associations are invited to send in the dates of their forthcoming meetings

January 9-Arkansas LPGA Mid-Winter Convention-Lafayette Hotel, Little Rock, Ark.
January 9-13—Pennsylvania LPGA "Ad-
Show, Harrisburg, Pa.  January 14—Texas Butane Dealers Association Mid-Winter Conference— St. Anthony Hotel, San Antonio, Tex.
St. Anthony Hotel, San Antonio, Tex.  January 20—NGAA Gulf Coast Regional Meeting—The Robert Driscoll Hotel, Corpus Christi, Texas.  January 22-24—Michigan LPGA 14th Annual Convention and Trade Show
January 22-24—Michigan LPGA 14th Annual Convention and Trade Show —Pantlind Hotel, Grand Rapids, Mich.
February 6-8—Northeast LPGA Convention and Trade Show—Sheraton Park Hotel, Washington, D. C.
chandising Conference—Hawaiian Village Hotel, Hanalulu, Hawaii
February 13-16—American Society of Heating, Rrefrigerating and Air Con- ditioning Engineers, Inc. Semi Annual Meeting and Exposition—Chicago, Ill.
February 22-24—Eastern Canada LPGA
Elizabeth Hotel, Montreal, Quebec. February 22-24—The Material Handling Institute Pacific Coast Show, Sixth Annual Materials Handling and Pack-
Francisco, Cal.  February 24 — NGAA South Louisiana
Regional Meeting—Lafayette Petro- leum Club, Lafayette, La. February 26-March I — Petrochemical
and Refining Exposition—Municipal
Auditorium, New Orleans, La.
Auditorium, New Örleans, La. March 5-7—Indiana LPGA Trade Show and Convention—Claypool Hotel, In- dianapolis, Ind.
and Convention—Claypool Hotel, Indianapolis, Ind.  March 15-17—NGAA 40th Annual Convention—The Baker and Adolphus Hotels, Dallas, Texas.
and Convention—Claypool Hotel, Indianapolis, Ind.  March 15-17—NGAA 40th Annual Convention—The Baker and Adolphus Hotels, Dallas, Texas.  April 13-15—Gas Appliance Manufac-
and Convention—Claypool Hotel, Indianapolis, Ind.  March 15-17—NGAA 40th Annual Convention—The Baker and Adolphus Hotels, Dallas, Texas.  April 13-15—Gas Appliance Manufac-
and Convention—Claypool Hotel, Indianapolis, Ind. March 15-17—NGAA 40th Annual Convention—The Baker and Adolphus Hotels, Dallas, Texas.  April 13-15—Gas Appliance Manufacturers Association Annual Meeting—Boca Raton Hotel, Boca Raton, Fla.  April 13-15—Western Liquid Gas Association Convention and Trade Show—Hotel El Dorado, Sacramento, Cal.  April 16-17—Kanses 196A Convention
and Convention—Claypool Hotel, Indianapolis, Ind.  March 15-17—NGAA 40th Annual Convention—The Baker and Adolphus Hotels, Dallas, Texas.  April 13-15—Gas Appliance Manufacturers Association Annual Meeting—Boca Raton Hotel, Boca Raton, Fla.  April 13-15—Western Liquid Gas Association Convention and Trade Show—Hotel El Dorado, Sacramento, Cal.  April 16-17—Kansas LPGA Convention—Allis Hotel, Wichita, Kan.
and Convention—Claypool Hotel, Indianapolis, Ind.  March 15-17—NGAA 40th Annual Convention—The Baker and Adolphus Hotels, Dallas, Texas.  April 13-15—Gas Appliance Manufacturers Association Annual Meeting—Boca Raton Hotel, Boca Raton, Fla.  April 13-15—Western Liquid Gas Association Convention and Trade Show—Hotel El Dorado, Sacramento, Cal.  April 16-17—Kansas LPGA Convention—Allis Hotel, Wichita, Kan.  April 16-18—American Home Laundry Appliance Manufacturer's Association Convention—Boca Raton Hotel and Club, Boca Raton, Fla.
and Convention—Claypool Hotel, Indianapolis, Ind.  March 15-17—NGAA 40th Annual Convention—The Baker and Adolphus Hotels, Dallas, Texas.  April 13-15—Gos Appliance Manufacturers Association Annual Meeting—Boca Raton Hotel, Boca Raton, Fla.  April 13-15—Western Liquid Gas Association Convention and Trade Show—Hotel El Dorado, Sacramento, Cal.  April 16-17—Kansas LPGA Convention—Allis Hotel, Wichita, Kan.  April 16-18—American Home Laundry Appliance Manufacturer's Association Convention—Boca Raton Hotel and Club, Boca Raton, Fla.  April 16-18—Ohio LPGA Annual Convention and Trade Show—Sheraton Gibson Hotel, Cincinnati, Ohio.  April 17-18—South Dakota LPGA Convention and Trade Show—Sheraton Cartract Hotels Slaws Ells, South December 19-15 Convention and Trade Show—Sheraton Cartract Hotels Slaws Ells, South Sells, Sell
and Convention—Claypool Hotel, Indianapolis, Ind.  March 15-17—NGAA 40th Annual Convention—The Baker and Adolphus Hotels, Dallas, Texas.  April 13-15—Gas Appliance Manufacturers Association Annual Meeting—Boca Raton Hotel, Boca Raton, Fla.  April 13-15—Western Liquid Gas Association Convention and Trade Show—Hotel El Dorado, Sacramento, Cal.  April 16-18—American Home Laundry Appliance Manufacturer's Association Convention—Boca Raton Hotel and Club, Boca Raton, Fla.  April 16-18—Nouthand Convention and Trade Show—Sheraton Gibson Hotel, Cincinnati, Ohio.  April 17-18—South Dakata L PGA Convention April 17-18—South Dakata L PGA Convention.

April 30-May 3—National LPGA Convention and Trade Show—Conrad Hilton Hotel, Chicago, III.

#### ADVERTISERS

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Although construction is different, the problem of payload is basic to pressure

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In all, there are seven basic reasons plus many others why you should go to vapor metering. They are described in our bulletin ADV-41. Write for your copy today. Rockwell Manufacturing Company, Pittsburgh 8, Pa. In Canada: Rockwell Manufacturing Company of Canada, Ltd., Guelph, Ontario.

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